

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Ballfields Parcels at DoDHF Novato, CA
Collection Date: April 5 through April 6, 2005
LDC Report Date: June 14, 2005
Matrix: Water
Parameters: Semivolatiles
Validation Level: NFESC Level III & IV
Laboratory: Columbia Analytical Services, Inc.
Sample Delivery Group (SDG): K2502571

Sample Identification

TO63-R3-GW01-ER
TO63-R3-GW01
TO63-R3-GW01-Dup
TO63-R4-GW01**
TO63-R5-GW01
TO63-R2-GW01
TO63-R1-GW01
TO63-SPN-GW01
TO63-RINSATE-02
TO63-RSP-GW01
TO63-R3-GW01MS
TO63-R3-GW01MSD

**Indicates sample underwent NFESC Level IV review

Introduction

This data review covers 12 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

The review follows the Final Sampling and Analysis Plan for Preliminary Assessment/Site Investigation of Ballfields Parcels at DoDHF Novato, California, (March 23, 2005) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Samples indicated by a double asterisk on the front cover underwent NFESC Level IV review. NFESC Level III review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by NFESC Level III criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs) with the following exceptions:

Date	Compound	%RSD	Associated Samples	Flag	A or P
4/27/05	4,6-Dinitro-2-methylphenol	28.2 (\leq 15)	All samples in SDG K2502571	J (all detects) UJ (all non-detects)	A

In the case where %RSD was greater than 15.0%, the laboratory used a calibration curve to evaluate the compound. All coefficients of determination (r^2) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all semivolatile target compounds and system performance check compounds (SPCCs) were greater than or equal to 0.05 as required.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
4/28/05	2,4-Dinitrophenol	24	All samples in SDG K2502571	J (all detects) UJ (all non-detects)	A

The percent difference (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values for all system performance check compounds (SPCCs) were within method criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
KWG0505761-4	4/11/05	Diethylphthalate Di-n-butylphthalate	0.027 ug/L 0.083 ug/L	All samples in SDG K2502571

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
TO63-R3-GW01-ER	Diethylphthalate Di-n-butylphthalate	0.048 ug/L 0.15 ug/L	0.21U ug/L 0.21U ug/L
TO63-R3-GW01	Diethylphthalate Di-n-butylphthalate	0.054 ug/L 0.14 ug/L	0.20U ug/L 0.20U ug/L
TO63-R3-GW01-Dup	Diethylphthalate Di-n-butylphthalate	0.052 ug/L 0.13 ug/L	0.19U ug/L 0.19U ug/L
TO63-R4-GW01**	Diethylphthalate Di-n-butylphthalate	0.069 ug/L 0.13 ug/L	0.10U ug/L 0.19U ug/L
TO63-R5-GW01	Diethylphthalate Di-n-butylphthalate	0.091 ug/L 0.12 ug/L	0.22U ug/L 0.22U ug/L
TO63-R2-GW01	Diethylphthalate Di-n-butylphthalate	0.12 ug/L 0.16 ug/L	0.27U ug/L 0.27U ug/L
TO63-R1-GW01	Di-n-butylphthalate	0.16 ug/L	0.20U ug/L
TO63-SPN-GW01	Diethylphthalate Di-n-butylphthalate	0.078 ug/L 0.14 ug/L	0.20U ug/L 0.20U ug/L

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
TO63-RINSATE-02	Diethylphthalate Di-n-butylphthalate	0.050 ug/L 0.13 ug/L	0.23U ug/L 0.23U ug/L
TO63-RSP-GW01	Diethylphthalate Di-n-butylphthalate	0.081 ug/L 0.15 ug/L	0.20U ug/L 0.20U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
TO63-R3-GW01MS/MSD (TO63-R3-GW01)	Pentachlorophenol	-	-	35 (\leq 30)	J (all detects) UJ (all non-detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which NFESC Level IV review was performed. Raw data were not evaluated for the samples reviewed by NFESC Level III criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which NFESC Level IV review was performed. Raw data were not evaluated for the samples reviewed by NFESC Level III criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was within validation criteria for samples on which NFESC Level IV review was performed. Raw data were not evaluated for the samples reviewed by NFESC Level III criteria.

XV. Overall Assessment

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples TO63-R3-GW01 and TO63-R3-GW01-Dup were identified as field duplicates. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	TO63-R3-GW01	TO63-R3-GW01-Dup	
Acetophenone	0.16	0.18	12
Isophorone	0.28	0.25	11
Naphthalene	0.023	0.19U	200
4-Chloroaniline	0.027	0.19U	200
Caprolactam	0.46	0.36	24
Benzaldehyde	0.29	0.14	70
Benzene	0.11	0.090	20
Diethylphthalate	0.054	0.052	4
Phenanthrene	0.018	0.19U	200

Compound	Concentration (ug/L)		RPD
	TO63-R3-GW01	TO63-R3-GW01-Dup	
Di-n-butylphthalate	0.14	0.13	7
Pyrene	0.018	0.19U	200

XVII. Field Blanks

Samples TO63-R3-GW01-ER and TO63-RINSATE-02 were identified as equipment rinsate. No semivolatile contaminants were found in this blank with the following exceptions:

Equipment Rinsate ID	Compound	Concentration (ug/L)
TO63-R3-GW01-ER	Acetophenone Caprolactam Benzene Diethylphthalate Di-n-butylphthalate Pyrene	0.21 0.25 0.070 0.048 0.15 0.015
TO63-RINSATE-02	Naphthalene Caprolactam Benzaldehyde Benzene Diethylphthalate Di-n-butylphthalate	0.050 0.42 0.84 0.11 0.050 0.13

Ballfields Parcels at DoDHF Novato, CA
Semivolatiles - Data Qualification Summary - SDG K2502571

SDG	Sample	Compound	Flag	A or P	Reason
K2502571	TO63-R3-GW01-ER TO63-R3-GW01 TO63-R3-GW01-Dup TO63-R4-GW01** TO63-R5-GW01 TO63-R2-GW01 TO63-R1-GW01 TO63-SPN-GW01 TO63-RINSATE-02 TO63-RSP-GW01	4,6-Dinitro-2-methylphenol	J (all detects) UJ (all non-detects)	A	Initial calibration (%RSD)
K2502571	TO63-R3-GW01-ER TO63-R3-GW01 TO63-R3-GW01-Dup TO63-R4-GW01** TO63-R5-GW01 TO63-R2-GW01 TO63-R1-GW01 TO63-SPN-GW01 TO63-RINSATE-02 TO63-RSP-GW01	2,4-Dinitrophenol	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
K2502571	TO63-R3-GW01	Pentachlorophenol	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicates (RPD)

Ballfields Parcels at DoDHF Novato, CA
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG K2502571

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
K2502571	TO63-R3-GW01-ER	Diethylphthalate Di-n-butylphthalate	0.21U ug/L 0.21U ug/L	A
K2502571	TO63-R3-GW01	Diethylphthalate Di-n-butylphthalate	0.20U ug/L 0.20U ug/L	A
K2502571	TO63-R3-GW01-Dup	Diethylphthalate Di-n-butylphthalate	0.19U ug/L 0.19U ug/L	A
K2502571	TO63-R4-GW01**	Diethylphthalate Di-n-butylphthalate	0.19U ug/L 0.19U ug/L	A
K2502571	TO63-R5-GW01	Diethylphthalate Di-n-butylphthalate	0.22U ug/L 0.22U ug/L	A

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
K2502571	TO63-R2-GW01	Diethylphthalate Di-n-butylphthalate	0.27U ug/L 0.27U ug/L	A
K2502571	TO63-R1-GW01	Di-n-butylphthalate	0.20U ug/L	A
K2502571	TO63-SPN-GW01	Diethylphthalate Di-n-butylphthalate	0.20U ug/L 0.20U ug/L	A
K2502571	TO63-RINSATE-02	Diethylphthalate Di-n-butylphthalate	0.23U ug/L 0.23U ug/L	A
K2502571	TO63-RSP-GW01	Diethylphthalate Di-n-butylphthalate	0.20U ug/L 0.20U ug/L	A

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
 Project: Novato Ballfields/G486063
 Sample Matrix: Water

Service Request: K2502571
 Date Collected: 04/07/2005
 Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name:	TO63-R3-GW01-ER	Units:	ug/L
Lab Code:	K2502571-001	Basis:	NA
Extraction Method:	EPA 3520C	Level:	Low
Analysis Method:	8270C		

Analyte Name	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2,4,5-Tetrachlorobenzene	ND U	0.21	0.058	1	04/11/05	04/28/05	KWG0505761	
Phenol	ND U	0.51	0.020	1	04/11/05	04/28/05	KWG0505761	
Bis(2-chloroethyl) Ether	ND U	0.21	0.015	1	04/11/05	04/28/05	KWG0505761	
2-Chlorophenol	ND U	0.51	0.015	1	04/11/05	04/28/05	KWG0505761	
2-Methylphenol	ND U	0.51	0.060	1	04/11/05	04/28/05	KWG0505761	
Bis(2-chloroisopropyl) Ether	ND U	0.21	0.017	1	04/11/05	04/28/05	KWG0505761	
Acetophenone	0.21 J	0.51	0.17	1	04/11/05	04/28/05	KWG0505761	
4-Methylphenol†	ND U	0.51	0.052	1	04/11/05	04/28/05	KWG0505761	
N-Nitrosodi-n-propylamine	ND U	0.21	0.033	1	04/11/05	04/28/05	KWG0505761	
Hexachloroethane	ND U	0.21	0.019	1	04/11/05	04/28/05	KWG0505761	
Nitrobenzene	ND U	0.21	0.0075	1	04/11/05	04/28/05	KWG0505761	
Isophorone	ND U	0.21	0.0086	1	04/11/05	04/28/05	KWG0505761	
2-Nitrophenol	ND U	0.51	0.014	1	04/11/05	04/28/05	KWG0505761	
2,4-Dimethylphenol	ND U	2.1	0.33	1	04/11/05	04/28/05	KWG0505761	
Bis(2-chloroethoxy)methane	ND U	0.21	0.012	1	04/11/05	04/28/05	KWG0505761	
2,4-Dichlorophenol	ND U	0.51	0.024	1	04/11/05	04/28/05	KWG0505761	
Naphthalene	ND U	0.21	0.013	1	04/11/05	04/28/05	KWG0505761	
4-Chloroaniline	ND U	0.21	0.018	1	04/11/05	04/28/05	KWG0505761	
Hexachlorobutadiene	ND U	0.21	0.020	1	04/11/05	04/28/05	KWG0505761	
Caprolactam	0.25 J	0.51	0.23	1	04/11/05	04/28/05	KWG0505761	
Benzaldehyde	ND U	0.21	0.047	1	04/11/05	04/28/05	KWG0505761	
4-Chloro-3-methylphenol	0.070 J	0.51	0.030	1	04/11/05	04/28/05	KWG0505761	
2-Methylnaphthalene	ND U	0.21	0.012	1	04/11/05	04/28/05	KWG0505761	
Hexachlorocyclopentadiene	ND U	1.1	0.042	1	04/11/05	04/28/05	KWG0505761	
2,4,6-Trichlorophenol	ND U	0.51	0.038	1	04/11/05	04/28/05	KWG0505761	
2,4,5-Trichlorophenol	ND U	0.51	0.026	1	04/11/05	04/28/05	KWG0505761	
Biphenyl	ND U	0.21	0.038	1	04/11/05	04/28/05	KWG0505761	
2-Chloronaphthalene	ND U	0.21	0.016	1	04/11/05	04/28/05	KWG0505761	
2-Nitroaniline	ND U	0.21	0.015	1	04/11/05	04/28/05	KWG0505761	
Dimethyl Phthalate	ND U	0.21	0.013	1	04/11/05	04/28/05	KWG0505761	
2,6-Dinitrotoluene	ND U	0.21	0.0089	1	04/11/05	04/28/05	KWG0505761	
Acenaphthylene	ND U	0.21	0.011	1	04/11/05	04/28/05	KWG0505761	
3-Nitroaniline	ND U	1.1	0.23	1	04/11/05	04/28/05	KWG0505761	

Comments: _____

4/17/05

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Water

Service Request: K2502571
Date Collected: 04/07/2005
Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name:	TO63-R3-GW01-ER	Units:	ug/L
Lab Code:	K2502571-001	Basis:	NA
Extraction Method:	EPA 3520C	Level:	Low
Analysis Method:	8270C		

Analyte Name	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acenaphthene	ND U	0.21	0.0089	1	04/11/05	04/28/05	KWG0505761	
2,4-Dinitrophenol	ND U μ J	4.1	0.54	1	04/11/05	04/28/05	KWG0505761	
4-Nitrophenol	ND U	2.1	0.54	1	04/11/05	04/28/05	KWG0505761	
Dibenzofuran	ND U	0.21	0.014	1	04/11/05	04/28/05	KWG0505761	
2,4-Dinitrotoluene	ND U	0.21	0.020	1	04/11/05	04/28/05	KWG0505761	
Diethyl Phthalate	0.048 J 0.21 μ	0.21	0.027	1	04/11/05	04/28/05	KWG0505761	
Fluorene	ND U	0.21	0.013	1	04/11/05	04/28/05	KWG0505761	
4-Chlorophenyl Phenyl Ether	ND U	0.21	0.0086	1	04/11/05	04/28/05	KWG0505761	
4-Nitroaniline	ND U	1.1	0.17	1	04/11/05	04/28/05	KWG0505761	
2-Methyl-4,6-dinitrophenol	ND U μ J	2.1	0.014	1	04/11/05	04/28/05	KWG0505761	
N-Nitrosodiphenylamine	ND U	0.21	0.029	1	04/11/05	04/28/05	KWG0505761	
4-Bromophenyl Phenyl Ether	ND U	0.21	0.018	1	04/11/05	04/28/05	KWG0505761	
Hexachlorobenzene	ND U	0.21	0.015	1	04/11/05	04/28/05	KWG0505761	
Atrazine	ND U	0.21	0.054	1	04/11/05	04/28/05	KWG0505761	
Pentachlorophenol	ND U	1.1	0.029	1	04/11/05	04/28/05	KWG0505761	
Phenanthere	ND U	0.21	0.011	1	04/11/05	04/28/05	KWG0505761	
Anthracene	ND U	0.21	0.015	1	04/11/05	04/28/05	KWG0505761	
Carbazole	ND U	0.21	0.013	1	04/11/05	04/28/05	KWG0505761	
Di-n-butyl Phthalate	0.15 J 0.21 μ	0.21	0.027	1	04/11/05	04/28/05	KWG0505761	
Fluoranthene	ND U	0.21	0.013	1	04/11/05	04/28/05	KWG0505761	
Pyrene	0.015 J	0.21	0.015	1	04/11/05	04/28/05	KWG0505761	
Butyl Benzyl Phthalate	ND U	0.21	0.026	1	04/11/05	04/28/05	KWG0505761	
3,3'-Dichlorobenzidine	ND U	2.1	0.44	1	04/11/05	04/28/05	KWG0505761	
Benz(a)anthracene	ND U	0.21	0.012	1	04/11/05	04/28/05	KWG0505761	
Chrysene	ND U	0.21	0.015	1	04/11/05	04/28/05	KWG0505761	
Bis(2-ethylhexyl) Phthalate	ND U	2.1	0.28	1	04/11/05	04/28/05	KWG0505761	
Di-n-octyl Phthalate	ND U	0.21	0.033	1	04/11/05	04/28/05	KWG0505761	
Benzo(b)fluoranthene	ND U	0.21	0.020	1	04/11/05	04/28/05	KWG0505761	
Benzo(k)fluoranthene	ND U	0.21	0.020	1	04/11/05	04/28/05	KWG0505761	
Benzo(a)pyrene	ND U	0.21	0.017	1	04/11/05	04/28/05	KWG0505761	
Indeno(1,2,3-cd)pyrene	ND U	0.21	0.025	1	04/11/05	04/28/05	KWG0505761	
Dibenz(a,h)anthracene	ND U	0.21	0.031	1	04/11/05	04/28/05	KWG0505761	
Benzo(g,h,i)perylene	ND U	0.21	0.017	1	04/11/05	04/28/05	KWG0505761	

Comments: _____

4/6/2005

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Water

Service Request: K2502571
Date Collected: 04/07/2005
Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name: TO63-R3-GW01-ER
Lab Code: K2502571-001

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	74	38-119	04/28/05	Acceptable
Phenol-d6	82	36-134	04/28/05	Acceptable
Nitrobenzene-d5	92	47-128	04/28/05	Acceptable
2-Fluorobiphenyl	85	41-117	04/28/05	Acceptable
2,4,6-Tribromophenol	76	44-135	04/28/05	Acceptable
Terphenyl-d14	108	32-155	04/28/05	Acceptable

† Analyte Comments

4-Methylphenol This analyte cannot be separated from 3-Methylphenol.

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Water

Service Request: K2502571
Date Collected: 04/07/2005
Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name:	TO63-R3-GW01	Units:	ug/L
Lab Code:	K2502571-002	Basis:	NA
Extraction Method:	EPA 3520C	Level:	Low
Analysis Method:	8270C		

Analyte Name	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2,4,5-Tetrachlorobenzene	ND U	0.20	0.057	1	04/11/05	04/28/05	KWG0505761	
Phenol	ND U	0.50	0.020	1	04/11/05	04/28/05	KWG0505761	
Bis(2-chloroethyl) Ether	ND U	0.20	0.015	1	04/11/05	04/28/05	KWG0505761	
2-Chlorophenol	ND U	0.50	0.015	1	04/11/05	04/28/05	KWG0505761	
2-Methylphenol	ND U	0.50	0.060	1	04/11/05	04/28/05	KWG0505761	
Bis(2-chloroisopropyl) Ether	ND U	0.20	0.017	1	04/11/05	04/28/05	KWG0505761	
Acetophenone	0.16 J	0.50	0.16	1	04/11/05	04/28/05	KWG0505761	
4-Methylphenol†	ND U	0.50	0.051	1	04/11/05	04/28/05	KWG0505761	
N-Nitrosodi-n-propylamine	ND U	0.20	0.033	1	04/11/05	04/28/05	KWG0505761	
Hexachloroethane	ND U	0.20	0.019	1	04/11/05	04/28/05	KWG0505761	
Nitrobenzene	ND U	0.20	0.0074	1	04/11/05	04/28/05	KWG0505761	
Isophorone	0.28	0.20	0.0085	1	04/11/05	04/28/05	KWG0505761	
2-Nitrophenol	ND U	0.50	0.014	1	04/11/05	04/28/05	KWG0505761	
2,4-Dimethylphenol	ND U	2.0	0.32	1	04/11/05	04/28/05	KWG0505761	
Bis(2-chloroethoxy)methane	ND U	0.20	0.012	1	04/11/05	04/28/05	KWG0505761	
2,4-Dichlorophenol	ND U	0.50	0.024	1	04/11/05	04/28/05	KWG0505761	
Naphthalene	0.023 J	0.20	0.012	1	04/11/05	04/28/05	KWG0505761	
4-Chloroaniline	0.027 J	0.20	0.018	1	04/11/05	04/28/05	KWG0505761	
Hexachlorobutadiene	ND U	0.20	0.020	1	04/11/05	04/28/05	KWG0505761	
Caprolactam	0.46 J	0.50	0.22	1	04/11/05	04/28/05	KWG0505761	
Benzaldehyde	0.29	0.20	0.046	1	04/11/05	04/28/05	KWG0505761	
4-Chloro-3-methylphenol	0.11 J	0.50	0.029	1	04/11/05	04/28/05	KWG0505761	
2-Methylnaphthalene	ND U	0.20	0.012	1	04/11/05	04/28/05	KWG0505761	
Hexachlorocyclopentadiene	ND U	1.0	0.041	1	04/11/05	04/28/05	KWG0505761	
2,4,6-Trichlorophenol	ND U	0.50	0.037	1	04/11/05	04/28/05	KWG0505761	
2,4,5-Trichlorophenol	ND U	0.50	0.026	1	04/11/05	04/28/05	KWG0505761	
Biphenyl	ND U	0.20	0.037	1	04/11/05	04/28/05	KWG0505761	
2-Chloronaphthalene	ND U	0.20	0.016	1	04/11/05	04/28/05	KWG0505761	
2-Nitroaniline	ND U	0.20	0.015	1	04/11/05	04/28/05	KWG0505761	
Dimethyl Phthalate	ND U	0.20	0.013	1	04/11/05	04/28/05	KWG0505761	
2,6-Dinitrotoluene	ND U	0.20	0.0088	1	04/11/05	04/28/05	KWG0505761	
Acenaphthylene	ND U	0.20	0.011	1	04/11/05	04/28/05	KWG0505761	
3-Nitroaniline	ND U	1.0	0.23	1	04/11/05	04/28/05	KWG0505761	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
 Project: Novato Ballfields/G486063
 Sample Matrix: Water

Service Request: K2502571
 Date Collected: 04/07/2005
 Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name: TO63-R3-GW01 Units: ug/L
 Lab Code: K2502571-002 Basis: NA
 Extraction Method: EPA 3520C Level: Low
 Analysis Method: 8270C

Analyte Name	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acenaphthene	ND U	0.20	0.0088	1	04/11/05	04/28/05	KWG0505761	
2,4-Dinitrophenol	ND U <i>4.5</i>	4.0	0.53	1	04/11/05	04/28/05	KWG0505761	
4-Nitrophenol	ND U	2.0	0.54	1	04/11/05	04/28/05	KWG0505761	
Dibenzofuran	ND U	0.20	0.014	1	04/11/05	04/28/05	KWG0505761	
2,4-Dinitrotoluene	ND U	0.20	0.020	1	04/11/05	04/28/05	KWG0505761	
Diethyl Phthalate	0.054 J <i>0.20μ</i>	0.20	0.026	1	04/11/05	04/28/05	KWG0505761	
Fluorene	ND U	0.20	0.012	1	04/11/05	04/28/05	KWG0505761	
4-Chlorophenyl Phenyl Ether	ND U	0.20	0.0085	1	04/11/05	04/28/05	KWG0505761	
4-Nitroaniline	ND U	1.0	0.17	1	04/11/05	04/28/05	KWG0505761	
2-Methyl-4,6-dinitrophenol	ND U <i>4.5</i>	2.0	0.013	1	04/11/05	04/28/05	KWG0505761	
N-Nitrosodiphenylamine	ND U	0.20	0.028	1	04/11/05	04/28/05	KWG0505761	
4-Bromophenyl Phenyl Ether	ND U	0.20	0.018	1	04/11/05	04/28/05	KWG0505761	
Hexachlorobenzene	ND U	0.20	0.015	1	04/11/05	04/28/05	KWG0505761	
Atrazine	ND U	0.20	0.053	1	04/11/05	04/28/05	KWG0505761	
Pentachlorophenol	ND U <i>4.5</i>	1.0	0.029	1	04/11/05	04/28/05	KWG0505761	
Phenanthrene	0.018 J	0.20	0.011	1	04/11/05	04/28/05	KWG0505761	
Anthracene	ND U	0.20	0.015	1	04/11/05	04/28/05	KWG0505761	
Carbazole	ND U	0.20	0.013	1	04/11/05	04/28/05	KWG0505761	
Di-n-butyl Phthalate	0.14 J <i>0.20μ</i>	0.20	0.027	1	04/11/05	04/28/05	KWG0505761	
Fluoranthene	ND U	0.20	0.013	1	04/11/05	04/28/05	KWG0505761	
Pyrene	0.018 J	0.20	0.015	1	04/11/05	04/28/05	KWG0505761	
Butyl Benzyl Phthalate	ND U	0.20	0.026	1	04/11/05	04/28/05	KWG0505761	
3,3'-Dichlorobenzidine	ND U	2.0	0.43	1	04/11/05	04/28/05	KWG0505761	
Benz(a)anthracene	ND U	0.20	0.012	1	04/11/05	04/28/05	KWG0505761	
Chrysene	ND U	0.20	0.014	1	04/11/05	04/28/05	KWG0505761	
Bis(2-ethylhexyl) Phthalate	ND U	2.0	0.27	1	04/11/05	04/28/05	KWG0505761	
Di-n-octyl Phthalate	ND U	0.20	0.032	1	04/11/05	04/28/05	KWG0505761	
Benzo(b)fluoranthene	ND U	0.20	0.020	1	04/11/05	04/28/05	KWG0505761	
Benzo(k)fluoranthene	ND U	0.20	0.020	1	04/11/05	04/28/05	KWG0505761	
Benzo(a)pyrene	ND U	0.20	0.016	1	04/11/05	04/28/05	KWG0505761	
Indeno(1,2,3-cd)pyrene	ND U	0.20	0.024	1	04/11/05	04/28/05	KWG0505761	
Dibenz(a,h)anthracene	ND U	0.20	0.031	1	04/11/05	04/28/05	KWG0505761	
Benzo(g,h,i)perylene	ND U	0.20	0.017	1	04/11/05	04/28/05	KWG0505761	

Comments: *4/6/05*

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Water

Service Request: K2502571
Date Collected: 04/07/2005
Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name: TO63-R3-GW01
Lab Code: K2502571-002

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	83	38-119	04/28/05	Acceptable
Phenol-d6	93	36-134	04/28/05	Acceptable
Nitrobenzene-d5	87	47-128	04/28/05	Acceptable
2-Fluorobiphenyl	85	41-117	04/28/05	Acceptable
2,4,6-Tribromophenol	102	44-135	04/28/05	Acceptable
Terphenyl-d14	62	32-155	04/28/05	Acceptable

† Analyte Comments

4-Methylphenol This analyte cannot be separated from 3-Methylphenol.

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
 Project: Novato Ballfields/G486063
 Sample Matrix: Water

Service Request: K2502571
 Date Collected: 04/07/2005
 Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name: TO63-R3-GW01-DUP Units: ug/L
 Lab Code: K2502571-003 Basis: NA
 Extraction Method: EPA 3520C Level: Low
 Analysis Method: 8270C

Analyte Name	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2,4,5-Tetrachlorobenzene	ND U	0.19	0.057	1	04/11/05	04/28/05	KWG0505761	
Phenol	ND U	0.48	0.020	1	04/11/05	04/28/05	KWG0505761	
Bis(2-chloroethyl) Ether	ND U	0.19	0.015	1	04/11/05	04/28/05	KWG0505761	
2-Chlorophenol	ND U	0.48	0.015	1	04/11/05	04/28/05	KWG0505761	
2-Methylphenol	ND U	0.48	0.060	1	04/11/05	04/28/05	KWG0505761	
Bis(2-chloroisopropyl) Ether	ND U	0.19	0.017	1	04/11/05	04/28/05	KWG0505761	
Acetophenone	0.18 J	0.48	0.16	1	04/11/05	04/28/05	KWG0505761	
4-Methylphenol†	ND U	0.48	0.051	1	04/11/05	04/28/05	KWG0505761	
N-Nitrosodi-n-propylamine	ND U	0.19	0.033	1	04/11/05	04/28/05	KWG0505761	
Hexachloroethane	ND U	0.19	0.019	1	04/11/05	04/28/05	KWG0505761	
Nitrobenzene	ND U	0.19	0.0074	1	04/11/05	04/28/05	KWG0505761	
Isophorone	0.25	0.19	0.0085	1	04/11/05	04/28/05	KWG0505761	
2-Nitrophenol	ND U	0.48	0.014	1	04/11/05	04/28/05	KWG0505761	
2,4-Dimethylphenol	ND U	1.9	0.32	1	04/11/05	04/28/05	KWG0505761	
Bis(2-chloroethoxy)methane	ND U	0.19	0.012	1	04/11/05	04/28/05	KWG0505761	
2,4-Dichlorophenol	ND U	0.48	0.024	1	04/11/05	04/28/05	KWG0505761	
Naphthalene	ND U	0.19	0.012	1	04/11/05	04/28/05	KWG0505761	
4-Chloroaniline	ND U	0.19	0.018	1	04/11/05	04/28/05	KWG0505761	
Hexachlorobutadiene	ND U	0.19	0.020	1	04/11/05	04/28/05	KWG0505761	
Caprolactam	0.36 J	0.48	0.22	1	04/11/05	04/28/05	KWG0505761	
Benzaldehyde	0.14 J	0.19	0.046	1	04/11/05	04/28/05	KWG0505761	
4-Chloro-3-methylphenol	0.090 J	0.48	0.029	1	04/11/05	04/28/05	KWG0505761	
2-Methylnaphthalene	ND U	0.19	0.012	1	04/11/05	04/28/05	KWG0505761	
Hexachlorocyclopentadiene	ND U	0.95	0.041	1	04/11/05	04/28/05	KWG0505761	
2,4,6-Trichlorophenol	ND U	0.48	0.037	1	04/11/05	04/28/05	KWG0505761	
2,4,5-Trichlorophenol	ND U	0.48	0.026	1	04/11/05	04/28/05	KWG0505761	
Biphenyl	ND U	0.19	0.037	1	04/11/05	04/28/05	KWG0505761	
2-Chloronaphthalene	ND U	0.19	0.016	1	04/11/05	04/28/05	KWG0505761	
2-Nitroaniline	ND U	0.19	0.015	1	04/11/05	04/28/05	KWG0505761	
Dimethyl Phthalate	ND U	0.19	0.013	1	04/11/05	04/28/05	KWG0505761	
2,6-Dinitrotoluene	ND U	0.19	0.0088	1	04/11/05	04/28/05	KWG0505761	
Acenaphthylene	ND U	0.19	0.011	1	04/11/05	04/28/05	KWG0505761	
3-Nitroaniline	ND U	0.95	0.23	1	04/11/05	04/28/05	KWG0505761	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
 Project: Novato Ballfields/G486063
 Sample Matrix: Water

Service Request: K2502571
 Date Collected: 04/07/2005
 Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name: TO63-R3-GW01-DUP Units: ug/L
 Lab Code: K2502571-003 Basis: NA
 Extraction Method: EPA 3520C Level: Low
 Analysis Method: 8270C

Analyte Name	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acenaphthene	ND U	0.19	0.0088	1	04/11/05	04/28/05	KWG0505761	
2,4-Dinitrophenol	ND U <i>WJ</i>	3.8	0.53	1	04/11/05	04/28/05	KWG0505761	
4-Nitrophenol	ND U	1.9	0.54	1	04/11/05	04/28/05	KWG0505761	
Dibenzofuran	ND U	0.19	0.014	1	04/11/05	04/28/05	KWG0505761	
2,4-Dinitrotoluene	ND U	0.19	0.020	1	04/11/05	04/28/05	KWG0505761	
Diethyl Phthalate	0.052 J <i>0.19U</i>	0.19	0.026	1	04/11/05	04/28/05	KWG0505761	
Fluorene	ND U	0.19	0.012	1	04/11/05	04/28/05	KWG0505761	
4-Chlorophenyl Phenyl Ether	ND U	0.19	0.0085	1	04/11/05	04/28/05	KWG0505761	
4-Nitroaniline	ND U	0.95	0.17	1	04/11/05	04/28/05	KWG0505761	
2-Methyl-4,6-dinitrophenol	ND U <i>WJ</i>	1.9	0.013	1	04/11/05	04/28/05	KWG0505761	
N-Nitrosodiphenylamine	ND U	0.19	0.028	1	04/11/05	04/28/05	KWG0505761	
4-Bromophenyl Phenyl Ether	ND U	0.19	0.018	1	04/11/05	04/28/05	KWG0505761	
Hexachlorobenzene	ND U	0.19	0.015	1	04/11/05	04/28/05	KWG0505761	
Atrazine	ND U	0.19	0.053	1	04/11/05	04/28/05	KWG0505761	
Pentachlorophenol	ND U	0.95	0.029	1	04/11/05	04/28/05	KWG0505761	
Phenanthrene	ND U	0.19	0.011	1	04/11/05	04/28/05	KWG0505761	
Anthracene	ND U	0.19	0.015	1	04/11/05	04/28/05	KWG0505761	
Carbazole	ND U	0.19	0.013	1	04/11/05	04/28/05	KWG0505761	
Di-n-butyl Phthalate	0.13 J <i>0.19U</i>	0.19	0.027	1	04/11/05	04/28/05	KWG0505761	
Fluoranthene	ND U	0.19	0.013	1	04/11/05	04/28/05	KWG0505761	
Pyrene	ND U	0.19	0.015	1	04/11/05	04/28/05	KWG0505761	
Butyl Benzyl Phthalate	ND U	0.19	0.026	1	04/11/05	04/28/05	KWG0505761	
3,3'-Dichlorobenzidine	ND U	1.9	0.43	1	04/11/05	04/28/05	KWG0505761	
Benz(a)anthracene	ND U	0.19	0.012	1	04/11/05	04/28/05	KWG0505761	
Chrysene	ND U	0.19	0.014	1	04/11/05	04/28/05	KWG0505761	
Bis(2-ethylhexyl) Phthalate	ND U	1.9	0.27	1	04/11/05	04/28/05	KWG0505761	
Di-n-octyl Phthalate	ND U	0.19	0.032	1	04/11/05	04/28/05	KWG0505761	
Benzo(b)fluoranthene	ND U	0.19	0.020	1	04/11/05	04/28/05	KWG0505761	
Benzo(k)fluoranthene	ND U	0.19	0.020	1	04/11/05	04/28/05	KWG0505761	
Benzo(a)pyrene	ND U	0.19	0.016	1	04/11/05	04/28/05	KWG0505761	
Indeno(1,2,3-cd)pyrene	ND U	0.19	0.024	1	04/11/05	04/28/05	KWG0505761	
Dibenz(a,h)anthracene	ND U	0.19	0.031	1	04/11/05	04/28/05	KWG0505761	
Benzo(g,h,i)perylene	ND U	0.19	0.017	1	04/11/05	04/28/05	KWG0505761	

Comments: _____

6/7/05

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Water

Service Request: K2502571
Date Collected: 04/07/2005
Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name: TO63-R3-GW01-DUP **Units:** ug/L
Lab Code: K2502571-003 **Basis:** NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	88	38-119	04/28/05	Acceptable
Phenol-d6	95	36-134	04/28/05	Acceptable
Nitrobenzene-d5	97	47-128	04/28/05	Acceptable
2-Fluorobiphenyl	93	41-117	04/28/05	Acceptable
2,4,6-Tribromophenol	106	44-135	04/28/05	Acceptable
Terphenyl-d14	94	32-155	04/28/05	Acceptable

† Analyte Comments

4-Methylphenol This analyte cannot be separated from 3-Methylphenol.

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Water

Service Request: K2502571
Date Collected: 04/07/2005
Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name:	TO63-R4-GW01	Units:	ug/L
Lab Code:	K2502571-004	Basis:	NA
Extraction Method:	EPA 3520C	Level:	Low
Analysis Method:	8270C		

Analyte Name	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2,4,5-Tetrachlorobenzene	ND U	0.19	0.057	1	04/11/05	04/28/05	KWG0505761	
Phenol	ND U	0.48	0.020	1	04/11/05	04/28/05	KWG0505761	
Bis(2-chloroethyl) Ether	ND U	0.19	0.015	1	04/11/05	04/28/05	KWG0505761	
2-Chlorophenol	ND U	0.48	0.015	1	04/11/05	04/28/05	KWG0505761	
2-Methylphenol	ND U	0.48	0.060	1	04/11/05	04/28/05	KWG0505761	
Bis(2-chloroisopropyl) Ether	ND U	0.19	0.017	1	04/11/05	04/28/05	KWG0505761	
Acetophenone	0.48 J	0.48	0.16	1	04/11/05	04/28/05	KWG0505761	
4-Methylphenol†	ND U	0.48	0.051	1	04/11/05	04/28/05	KWG0505761	
N-Nitrosodi-n-propylamine	ND U	0.19	0.033	1	04/11/05	04/28/05	KWG0505761	
Hexachloroethane	ND U	0.19	0.019	1	04/11/05	04/28/05	KWG0505761	
Nitrobenzene	ND U	0.19	0.0074	1	04/11/05	04/28/05	KWG0505761	
Isophorone	0.58	0.19	0.0085	1	04/11/05	04/28/05	KWG0505761	
2-Nitrophenol	ND U	0.48	0.014	1	04/11/05	04/28/05	KWG0505761	
2,4-Dimethylphenol	ND U	1.9	0.32	1	04/11/05	04/28/05	KWG0505761	
Bis(2-chloroethoxy)methane	ND U	0.19	0.012	1	04/11/05	04/28/05	KWG0505761	
2,4-Dichlorophenol	0.027 J	0.48	0.024	1	04/11/05	04/28/05	KWG0505761	
Naphthalene	ND U	0.19	0.012	1	04/11/05	04/28/05	KWG0505761	
4-Chloroaniline	ND U	0.19	0.018	1	04/11/05	04/28/05	KWG0505761	
Hexachlorobutadiene	ND U	0.19	0.020	1	04/11/05	04/28/05	KWG0505761	
Caprolactam	ND U	0.48	0.22	1	04/11/05	04/28/05	KWG0505761	
Benzaldehyde	0.27	0.19	0.046	1	04/11/05	04/28/05	KWG0505761	
4-Chloro-3-methylphenol	0.096 J	0.48	0.029	1	04/11/05	04/28/05	KWG0505761	
2-Methylnaphthalene	ND U	0.19	0.012	1	04/11/05	04/28/05	KWG0505761	
Hexachlorocyclopentadiene	ND U	0.95	0.041	1	04/11/05	04/28/05	KWG0505761	
2,4,6-Trichlorophenol	ND U	0.48	0.037	1	04/11/05	04/28/05	KWG0505761	
2,4,5-Trichlorophenol	ND U	0.48	0.026	1	04/11/05	04/28/05	KWG0505761	
Biphenyl	ND U	0.19	0.037	1	04/11/05	04/28/05	KWG0505761	
2-Chloronaphthalene	ND U	0.19	0.016	1	04/11/05	04/28/05	KWG0505761	
2-Nitroaniline	ND U	0.19	0.015	1	04/11/05	04/28/05	KWG0505761	
Dimethyl Phthalate	ND U	0.19	0.013	1	04/11/05	04/28/05	KWG0505761	
2,6-Dinitrotoluene	ND U	0.19	0.0088	1	04/11/05	04/28/05	KWG0505761	
Acenaphthylene	ND U	0.19	0.011	1	04/11/05	04/28/05	KWG0505761	
3-Nitroaniline	ND U	0.95	0.23	1	04/11/05	04/28/05	KWG0505761	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Water

Service Request: K2502571
Date Collected: 04/07/2005
Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name: TO63-R4-GW01 **Units:** ug/L
Lab Code: K2502571-004 **Basis:** NA
Extraction Method: EPA 3520C **Level:** Low
Analysis Method: 8270C

Analyte Name	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acenaphthene	ND U	0.19	0.0088	1	04/11/05	04/28/05	KWG0505761	
2,4-Dinitrophenol	ND U <i>UJ</i>	3.8	0.53	1	04/11/05	04/28/05	KWG0505761	
4-Nitrophenol	ND U	1.9	0.54	1	04/11/05	04/28/05	KWG0505761	
Dibenzofuran	ND U	0.19	0.014	1	04/11/05	04/28/05	KWG0505761	
2,4-Dinitrotoluene	ND U	0.19	0.020	1	04/11/05	04/28/05	KWG0505761	
Diethyl Phthalate	0.063 J <i>0.19u</i>	0.19	0.026	1	04/11/05	04/28/05	KWG0505761	
Fluorene	ND U	0.19	0.012	1	04/11/05	04/28/05	KWG0505761	
4-Chlorophenyl Phenyl Ether	ND U	0.19	0.0085	1	04/11/05	04/28/05	KWG0505761	
4-Nitroaniline	ND U	0.95	0.17	1	04/11/05	04/28/05	KWG0505761	
2-Methyl-4,6-dinitrophenol	ND U <i>UJ</i>	1.9	0.013	1	04/11/05	04/28/05	KWG0505761	
N-Nitrosodiphenylamine	ND U	0.19	0.028	1	04/11/05	04/28/05	KWG0505761	
4-Bromophenyl Phenyl Ether	ND U	0.19	0.018	1	04/11/05	04/28/05	KWG0505761	
Hexachlorobenzene	ND U	0.19	0.015	1	04/11/05	04/28/05	KWG0505761	
Atrazine	ND U	0.19	0.053	1	04/11/05	04/28/05	KWG0505761	
Pentachlorophenol	ND U	0.95	0.029	1	04/11/05	04/28/05	KWG0505761	
Phenanthrene	0.018 J	0.19	0.011	1	04/11/05	04/28/05	KWG0505761	
Anthracene	ND U	0.19	0.015	1	04/11/05	04/28/05	KWG0505761	
Carbazole	ND U	0.19	0.013	1	04/11/05	04/28/05	KWG0505761	
Di-n-butyl Phthalate	0.13 J <i>0.19u</i>	0.19	0.027	1	04/11/05	04/28/05	KWG0505761	
Fluoranthene	ND U	0.19	0.013	1	04/11/05	04/28/05	KWG0505761	
Pyrene	ND U	0.19	0.015	1	04/11/05	04/28/05	KWG0505761	
Butyl Benzyl Phthalate	ND U	0.19	0.026	1	04/11/05	04/28/05	KWG0505761	
3,3'-Dichlorobenzidine	ND U	1.9	0.43	1	04/11/05	04/28/05	KWG0505761	
Benz(a)anthracene	ND U	0.19	0.012	1	04/11/05	04/28/05	KWG0505761	
Chrysene	ND U	0.19	0.014	1	04/11/05	04/28/05	KWG0505761	
Bis(2-ethylhexyl) Phthalate	ND U	1.9	0.27	1	04/11/05	04/28/05	KWG0505761	
Di-n-octyl Phthalate	ND U	0.19	0.032	1	04/11/05	04/28/05	KWG0505761	
Benzo(b)fluoranthene	ND U	0.19	0.020	1	04/11/05	04/28/05	KWG0505761	
Benzo(k)fluoranthene	ND U	0.19	0.020	1	04/11/05	04/28/05	KWG0505761	
Benzo(a)pyrene	ND U	0.19	0.016	1	04/11/05	04/28/05	KWG0505761	
Indeno(1,2,3-cd)pyrene	ND U	0.19	0.024	1	04/11/05	04/28/05	KWG0505761	
Dibenz(a,h)anthracene	ND U	0.19	0.031	1	04/11/05	04/28/05	KWG0505761	
Benzo(g,h,i)perylene	ND U	0.19	0.017	1	04/11/05	04/28/05	KWG0505761	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Water

Service Request: K2502571
Date Collected: 04/07/2005
Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name: TO63-R4-GW01 **Units:** ug/L
Lab Code: K2502571-004 **Basis:** NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	85	38-119	04/28/05	Acceptable
Phenol-d6	93	36-134	04/28/05	Acceptable
Nitrobenzene-d5	92	47-128	04/28/05	Acceptable
2-Fluorobiphenyl	86	41-117	04/28/05	Acceptable
2,4,6-Tribromophenol	103	44-135	04/28/05	Acceptable
Terphenyl-d14	89	32-155	04/28/05	Acceptable

† Analyte Comments

4-Methylphenol This analyte cannot be separated from 3-Methylphenol.

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Water

Service Request: K2502571
Date Collected: 04/07/2005
Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name:	TO63-R5-GW01	Units:	ug/L
Lab Code:	K2502571-005	Basis:	NA
Extraction Method:	EPA 3520C	Level:	Low
Analysis Method:	8270C		

Analyte Name	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2,4,5-Tetrachlorobenzene	ND U	0.22	0.060	1	04/11/05	04/28/05	KWG0505761	
Phenol	ND U	0.53	0.021	1	04/11/05	04/28/05	KWG0505761	
Bis(2-chloroethyl) Ether	ND U	0.22	0.015	1	04/11/05	04/28/05	KWG0505761	
2-Chlorophenol	ND U	0.53	0.016	1	04/11/05	04/28/05	KWG0505761	
2-Methylphenol	ND U	0.53	0.063	1	04/11/05	04/28/05	KWG0505761	
Bis(2-chloroisopropyl) Ether	ND U	0.22	0.018	1	04/11/05	04/28/05	KWG0505761	
Acetophenone	0.33 J	0.53	0.17	1	04/11/05	04/28/05	KWG0505761	
4-Methylphenol†	ND U	0.53	0.054	1	04/11/05	04/28/05	KWG0505761	
N-Nitrosodi-n-propylamine	ND U	0.22	0.034	1	04/11/05	04/28/05	KWG0505761	
Hexachloroethane	ND U	0.22	0.020	1	04/11/05	04/28/05	KWG0505761	
Nitrobenzene	ND U	0.22	0.0078	1	04/11/05	04/28/05	KWG0505761	
Isophorone	ND U	0.22	0.0089	1	04/11/05	04/28/05	KWG0505761	
2-Nitrophenol	ND U	0.53	0.015	1	04/11/05	04/28/05	KWG0505761	
2,4-Dimethylphenol	ND U	2.2	0.34	1	04/11/05	04/28/05	KWG0505761	
Bis(2-chloroethoxy)methane	ND U	0.22	0.012	1	04/11/05	04/28/05	KWG0505761	
2,4-Dichlorophenol	0.030 J	0.53	0.025	1	04/11/05	04/28/05	KWG0505761	
Naphthalene	ND U	0.22	0.013	1	04/11/05	04/28/05	KWG0505761	
4-Chloroaniline	ND U	0.22	0.019	1	04/11/05	04/28/05	KWG0505761	
Hexachlorobutadiene	ND U	0.22	0.021	1	04/11/05	04/28/05	KWG0505761	
Caprolactam	0.44 J	0.53	0.24	1	04/11/05	04/28/05	KWG0505761	
Benzaldehyde	0.27	0.22	0.049	1	04/11/05	04/28/05	KWG0505761	
4-Chloro-3-methylphenol	0.11 J	0.53	0.031	1	04/11/05	04/28/05	KWG0505761	
2-Methylnaphthalene	ND U	0.22	0.012	1	04/11/05	04/28/05	KWG0505761	
Hexachlorocyclopentadiene	ND U	1.1	0.043	1	04/11/05	04/28/05	KWG0505761	
2,4,6-Trichlorophenol	ND U	0.53	0.039	1	04/11/05	04/28/05	KWG0505761	
2,4,5-Trichlorophenol	ND U	0.53	0.027	1	04/11/05	04/28/05	KWG0505761	
Biphenyl	0.050 J	0.22	0.039	1	04/11/05	04/28/05	KWG0505761	
2-Chloronaphthalene	ND U	0.22	0.016	1	04/11/05	04/28/05	KWG0505761	
2-Nitroaniline	ND U	0.22	0.016	1	04/11/05	04/28/05	KWG0505761	
Dimethyl Phthalate	ND U	0.22	0.014	1	04/11/05	04/28/05	KWG0505761	
2,6-Dinitrotoluene	ND U	0.22	0.0093	1	04/11/05	04/28/05	KWG0505761	
Acenaphthylene	ND U	0.22	0.011	1	04/11/05	04/28/05	KWG0505761	
3-Nitroaniline	ND U	1.1	0.24	1	04/11/05	04/28/05	KWG0505761	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
 Project: Novato Ballfields/G486063
 Sample Matrix: Water

Service Request: K2502571
 Date Collected: 04/07/2005
 Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name:	TO63-R5-GW01	Units:	ug/L
Lab Code:	K2502571-005	Basis:	NA
Extraction Method:	EPA 3520C	Level:	Low
Analysis Method:	8270C		

Analyte Name	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acenaphthene	ND U	0.22	0.0092	1	04/11/05	04/28/05	KWG0505761	
2,4-Dinitrophenol	ND U <i>UJ</i>	4.3	0.56	1	04/11/05	04/28/05	KWG0505761	
4-Nitrophenol	ND U	2.2	0.57	1	04/11/05	04/28/05	KWG0505761	
Dibenzofuran	ND U	0.22	0.014	1	04/11/05	04/28/05	KWG0505761	
2,4-Dinitrotoluene	ND U	0.22	0.021	1	04/11/05	04/28/05	KWG0505761	
Diethyl Phthalate	0.091 J <i>0.22u</i>	0.22	0.028	1	04/11/05	04/28/05	KWG0505761	
Fluorene	ND U	0.22	0.013	1	04/11/05	04/28/05	KWG0505761	
4-Chlorophenyl Phenyl Ether	ND U	0.22	0.0089	1	04/11/05	04/28/05	KWG0505761	
4-Nitroaniline	ND U	1.1	0.18	1	04/11/05	04/28/05	KWG0505761	
2-Methyl-4,6-dinitrophenol	ND U <i>UJ</i>	2.2	0.014	1	04/11/05	04/28/05	KWG0505761	
N-Nitrosodiphenylamine	ND U	0.22	0.030	1	04/11/05	04/28/05	KWG0505761	
4-Bromophenyl Phenyl Ether	ND U	0.22	0.019	1	04/11/05	04/28/05	KWG0505761	
Hexachlorobenzene	ND U	0.22	0.015	1	04/11/05	04/28/05	KWG0505761	
Atrazine	ND U	0.22	0.056	1	04/11/05	04/28/05	KWG0505761	
Pentachlorophenol	ND U	1.1	0.030	1	04/11/05	04/28/05	KWG0505761	
Phenanthrene	0.023 J	0.22	0.011	1	04/11/05	04/28/05	KWG0505761	
Anthracene	ND U	0.22	0.016	1	04/11/05	04/28/05	KWG0505761	
Carbazole	ND U	0.22	0.014	1	04/11/05	04/28/05	KWG0505761	
Di-n-butyl Phthalate	0.12 J <i>0.22u</i>	0.22	0.028	1	04/11/05	04/28/05	KWG0505761	
Fluoranthene	ND U	0.22	0.013	1	04/11/05	04/28/05	KWG0505761	
Pyrene	ND U	0.22	0.016	1	04/11/05	04/28/05	KWG0505761	
Butyl Benzyl Phthalate	ND U	0.22	0.027	1	04/11/05	04/28/05	KWG0505761	
3,3'-Dichlorobenzidine	ND U	2.2	0.46	1	04/11/05	04/28/05	KWG0505761	
Benz(a)anthracene	ND U	0.22	0.013	1	04/11/05	04/28/05	KWG0505761	
Chrysene	ND U	0.22	0.015	1	04/11/05	04/28/05	KWG0505761	
Bis(2-ethylhexyl) Phthalate	ND U	2.2	0.29	1	04/11/05	04/28/05	KWG0505761	
Di-n-octyl Phthalate	ND U	0.22	0.034	1	04/11/05	04/28/05	KWG0505761	
Benzo(b)fluoranthene	ND U	0.22	0.021	1	04/11/05	04/28/05	KWG0505761	
Benzo(k)fluoranthene	ND U	0.22	0.021	1	04/11/05	04/28/05	KWG0505761	
Benzo(a)pyrene	ND U	0.22	0.017	1	04/11/05	04/28/05	KWG0505761	
Indeno(1,2,3-cd)pyrene	ND U	0.22	0.026	1	04/11/05	04/28/05	KWG0505761	
Dibenz(a,h)anthracene	ND U	0.22	0.032	1	04/11/05	04/28/05	KWG0505761	
Benzo(g,h,i)perylene	ND U	0.22	0.018	1	04/11/05	04/28/05	KWG0505761	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Water

Service Request: K2502571
Date Collected: 04/07/2005
Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name: TO63-R5-GW01
Lab Code: K2502571-005

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	83	38-119	04/28/05	Acceptable
Phenol-d6	94	36-134	04/28/05	Acceptable
Nitrobenzene-d5	91	47-128	04/28/05	Acceptable
2-Fluorobiphenyl	90	41-117	04/28/05	Acceptable
2,4,6-Tribromophenol	105	44-135	04/28/05	Acceptable
Terphenyl-d14	69	32-155	04/28/05	Acceptable

† Analyte Comments

4-Methylphenol This analyte cannot be separated from 3-Methylphenol.

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
 Project: Novato Ballfields/G486063
 Sample Matrix: Water

Service Request: K2502571
 Date Collected: 04/07/2005
 Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name:	TO63-R2-GW01	Units:	ug/L
Lab Code:	K2502571-007	Basis:	NA
Extraction Method:	EPA 3520C	Level:	Low
Analysis Method:	8270C		

Analyte Name	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2,4,5-Tetrachlorobenzene	ND U	0.27	0.076	1	04/11/05	04/28/05	KWG0505761	
Phenol	ND U	0.67	0.027	1	04/11/05	04/28/05	KWG0505761	
Bis(2-chloroethyl) Ether	ND U	0.27	0.019	1	04/11/05	04/28/05	KWG0505761	
2-Chlorophenol	ND U	0.67	0.020	1	04/11/05	04/28/05	KWG0505761	
2-Methylphenol	ND U	0.67	0.080	1	04/11/05	04/28/05	KWG0505761	
Bis(2-chloroisopropyl) Ether	ND U	0.27	0.023	1	04/11/05	04/28/05	KWG0505761	
Acetophenone	0.45 J	0.67	0.22	1	04/11/05	04/28/05	KWG0505761	
4-Methylphenol†	ND U	0.67	0.068	1	04/11/05	04/28/05	KWG0505761	
N-Nitrosodi-n-propylamine	ND U	0.27	0.044	1	04/11/05	04/28/05	KWG0505761	
Hexachloroethane	ND U	0.27	0.025	1	04/11/05	04/28/05	KWG0505761	
Nitrobenzene	ND U	0.27	0.0099	1	04/11/05	04/28/05	KWG0505761	
Isophorone	0.66	0.27	0.012	1	04/11/05	04/28/05	KWG0505761	
2-Nitrophenol	ND U	0.67	0.018	1	04/11/05	04/28/05	KWG0505761	
2,4-Dimethylphenol	ND U	2.7	0.43	1	04/11/05	04/28/05	KWG0505761	
Bis(2-chloroethoxy)methane	ND U	0.27	0.016	1	04/11/05	04/28/05	KWG0505761	
2,4-Dichlorophenol	ND U	0.67	0.032	1	04/11/05	04/28/05	KWG0505761	
Naphthalene	0.059 J	0.27	0.016	1	04/11/05	04/28/05	KWG0505761	
4-Chloroaniline	ND U	0.27	0.024	1	04/11/05	04/28/05	KWG0505761	
Hexachlorobutadiene	ND U	0.27	0.026	1	04/11/05	04/28/05	KWG0505761	
Caprolactam	ND U	0.67	0.30	1	04/11/05	04/28/05	KWG0505761	
Benzaldehyde	1.0	0.27	0.062	1	04/11/05	04/28/05	KWG0505761	
4-Chloro-3-methylphenol	0.12 J	0.67	0.039	1	04/11/05	04/28/05	KWG0505761	
2-Methylnaphthalene	0.019 J	0.27	0.015	1	04/11/05	04/28/05	KWG0505761	
Hexachlorocyclopentadiene	ND U	1.4	0.055	1	04/11/05	04/28/05	KWG0505761	
2,4,6-Trichlorophenol	ND U	0.67	0.049	1	04/11/05	04/28/05	KWG0505761	
2,4,5-Trichlorophenol	ND U	0.67	0.034	1	04/11/05	04/28/05	KWG0505761	
Biphenyl	ND U	0.27	0.050	1	04/11/05	04/28/05	KWG0505761	
2-Chloronaphthalene	ND U	0.27	0.021	1	04/11/05	04/28/05	KWG0505761	
2-Nitroaniline	ND U	0.27	0.020	1	04/11/05	04/28/05	KWG0505761	
Dimethyl Phthalate	ND U	0.27	0.017	1	04/11/05	04/28/05	KWG0505761	
2,6-Dinitrotoluene	ND U	0.27	0.012	1	04/11/05	04/28/05	KWG0505761	
Acenaphthylene	ND U	0.27	0.014	1	04/11/05	04/28/05	KWG0505761	
3-Nitroaniline	ND U	1.4	0.31	1	04/11/05	04/28/05	KWG0505761	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Water

Service Request: K2502571
Date Collected: 04/07/2005
Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name:	TO63-R2-GW01	Units:	ug/L
Lab Code:	K2502571-007	Basis:	NA
Extraction Method:	EPA 3520C	Level:	Low
Analysis Method:	8270C		

Analyte Name	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acenaphthene	ND U	0.27	0.012	1	04/11/05	04/28/05	KWG0505761	
2,4-Dinitrophenol	ND U <i>NJ</i>	5.4	0.71	1	04/11/05	04/28/05	KWG0505761	
4-Nitrophenol	ND U	2.7	0.72	1	04/11/05	04/28/05	KWG0505761	
Dibenzofuran	ND U	0.27	0.018	1	04/11/05	04/28/05	KWG0505761	
2,4-Dinitrotoluene	ND U	0.27	0.026	1	04/11/05	04/28/05	KWG0505761	
Diethyl Phthalate	0.12 J <i>0.27u</i>	0.27	0.035	1	04/11/05	04/28/05	KWG0505761	
Fluorene	ND U	0.27	0.016	1	04/11/05	04/28/05	KWG0505761	
4-Chlorophenyl Phenyl Ether	ND U	0.27	0.012	1	04/11/05	04/28/05	KWG0505761	
4-Nitroaniline	ND U	1.4	0.22	1	04/11/05	04/28/05	KWG0505761	
2-Methyl-4,6-dinitrophenol	ND U <i>NJ</i>	2.7	0.018	1	04/11/05	04/28/05	KWG0505761	
N-Nitrosodiphenylamine	ND U	0.27	0.038	1	04/11/05	04/28/05	KWG0505761	
4-Bromophenyl Phenyl Ether	ND U	0.27	0.024	1	04/11/05	04/28/05	KWG0505761	
Hexachlorobenzene	ND U	0.27	0.019	1	04/11/05	04/28/05	KWG0505761	
Atrazine	ND U	0.27	0.071	1	04/11/05	04/28/05	KWG0505761	
Pentachlorophenol	ND U	1.4	0.038	1	04/11/05	04/28/05	KWG0505761	
Phenanthrene	0.039 J	0.27	0.014	1	04/11/05	04/28/05	KWG0505761	
Anthracene	ND U	0.27	0.020	1	04/11/05	04/28/05	KWG0505761	
Carbazole	ND U	0.27	0.017	1	04/11/05	04/28/05	KWG0505761	
Di-n-butyl Phthalate	0.16 J <i>0.27u</i>	0.27	0.036	1	04/11/05	04/28/05	KWG0505761	
Fluoranthene	0.033 J	0.27	0.017	1	04/11/05	04/28/05	KWG0505761	
Pyrene	0.025 J	0.27	0.020	1	04/11/05	04/28/05	KWG0505761	
Butyl Benzyl Phthalate	ND U	0.27	0.034	1	04/11/05	04/28/05	KWG0505761	
3,3'-Dichlorobenzidine	ND U	2.7	0.58	1	04/11/05	04/28/05	KWG0505761	
Benz(a)anthracene	ND U	0.27	0.016	1	04/11/05	04/28/05	KWG0505761	
Chrysene	ND U	0.27	0.019	1	04/11/05	04/28/05	KWG0505761	
Bis(2-ethylhexyl) Phthalate	0.61 J	2.7	0.36	1	04/11/05	04/28/05	KWG0505761	
Di-n-octyl Phthalate	ND U	0.27	0.043	1	04/11/05	04/28/05	KWG0505761	
Benzo(b)fluoranthene	ND U	0.27	0.026	1	04/11/05	04/28/05	KWG0505761	
Benzo(k)fluoranthene	ND U	0.27	0.026	1	04/11/05	04/28/05	KWG0505761	
Benzo(a)pyrene	ND U	0.27	0.022	1	04/11/05	04/28/05	KWG0505761	
Indeno(1,2,3-cd)pyrene	ND U	0.27	0.032	1	04/11/05	04/28/05	KWG0505761	
Dibenz(a,h)anthracene	ND U	0.27	0.041	1	04/11/05	04/28/05	KWG0505761	
Benzo(g,h,i)perylene	ND U	0.27	0.022	1	04/11/05	04/28/05	KWG0505761	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Water

Service Request: K2502571
Date Collected: 04/07/2005
Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name: TO63-R2-GW01
Lab Code: K2502571-007

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	84	38-119	04/28/05	Acceptable
Phenol-d6	85	36-134	04/28/05	Acceptable
Nitrobenzene-d5	92	47-128	04/28/05	Acceptable
2-Fluorobiphenyl	70	41-117	04/28/05	Acceptable
2,4,6-Tribromophenol	79	44-135	04/28/05	Acceptable
Terphenyl-d14	33	32-155	04/28/05	Acceptable

† Analyte Comments

4-Methylphenol This analyte cannot be separated from 3-Methylphenol.

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
 Project: Novato Ballfields/G486063
 Sample Matrix: Water

Service Request: K2502571
 Date Collected: 04/07/2005
 Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name: TO63-R1-GW01 Units: ug/L
 Lab Code: K2502571-008 Basis: NA
 Extraction Method: EPA 3520C Level: Low
 Analysis Method: 8270C

Analyte Name	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2,4,5-Tetrachlorobenzene	ND U	0.20	0.057	1	04/11/05	04/28/05	KWG0505761	
Phenol	ND U	0.49	0.020	1	04/11/05	04/28/05	KWG0505761	
Bis(2-chloroethyl) Ether	ND U	0.20	0.015	1	04/11/05	04/28/05	KWG0505761	
2-Chlorophenol	ND U	0.49	0.015	1	04/11/05	04/28/05	KWG0505761	
2-Methylphenol	ND U	0.49	0.060	1	04/11/05	04/28/05	KWG0505761	
Bis(2-chloroisopropyl) Ether	ND U	0.20	0.017	1	04/11/05	04/28/05	KWG0505761	
Acetophenone	0.33 J	0.49	0.16	1	04/11/05	04/28/05	KWG0505761	
4-Methylphenol†	ND U	0.49	0.051	1	04/11/05	04/28/05	KWG0505761	
N-Nitrosodi-n-propylamine	ND U	0.20	0.033	1	04/11/05	04/28/05	KWG0505761	
Hexachloroethane	ND U	0.20	0.019	1	04/11/05	04/28/05	KWG0505761	
Nitrobenzene	ND U	0.20	0.0074	1	04/11/05	04/28/05	KWG0505761	
Isophorone	0.23	0.20	0.0085	1	04/11/05	04/28/05	KWG0505761	
2-Nitrophenol	ND U	0.49	0.014	1	04/11/05	04/28/05	KWG0505761	
2,4-Dimethylphenol	ND U	2.0	0.32	1	04/11/05	04/28/05	KWG0505761	
Bis(2-chloroethoxy)methane	ND U	0.20	0.012	1	04/11/05	04/28/05	KWG0505761	
2,4-Dichlorophenol	ND U	0.49	0.024	1	04/11/05	04/28/05	KWG0505761	
Naphthalene	0.19 J	0.20	0.012	1	04/11/05	04/28/05	KWG0505761	
4-Chloroaniline	ND U	0.20	0.018	1	04/11/05	04/28/05	KWG0505761	
Hexachlorobutadiene	ND U	0.20	0.020	1	04/11/05	04/28/05	KWG0505761	
Caprolactam	2.1	0.49	0.22	1	04/11/05	04/28/05	KWG0505761	
Benzaldehyde	1.0	0.20	0.046	1	04/11/05	04/28/05	KWG0505761	
4-Chloro-3-methylphenol	0.079 J	0.49	0.029	1	04/11/05	04/28/05	KWG0505761	
2-Methylnaphthalene	0.13 J	0.20	0.012	1	04/11/05	04/28/05	KWG0505761	
Hexachlorocyclopentadiene	ND U	0.97	0.041	1	04/11/05	04/28/05	KWG0505761	
2,4,6-Trichlorophenol	ND U	0.49	0.037	1	04/11/05	04/28/05	KWG0505761	
2,4,5-Trichlorophenol	ND U	0.49	0.026	1	04/11/05	04/28/05	KWG0505761	
Biphenyl	0.083 J	0.20	0.037	1	04/11/05	04/28/05	KWG0505761	
2-Chloronaphthalene	ND U	0.20	0.016	1	04/11/05	04/28/05	KWG0505761	
2-Nitroaniline	ND U	0.20	0.015	1	04/11/05	04/28/05	KWG0505761	
Dimethyl Phthalate	ND U	0.20	0.013	1	04/11/05	04/28/05	KWG0505761	
2,6-Dinitrotoluene	ND U	0.20	0.0088	1	04/11/05	04/28/05	KWG0505761	
Acenaphthylene	ND U	0.20	0.011	1	04/11/05	04/28/05	KWG0505761	
3-Nitroaniline	ND U	0.97	0.23	1	04/11/05	04/28/05	KWG0505761	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Water

Service Request: K2502571
Date Collected: 04/07/2005
Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name:	TO63-R1-GW01	Units:	ug/L
Lab Code:	K2502571-008	Basis:	NA
Extraction Method:	EPA 3520C	Level:	Low
Analysis Method:	8270C		

Analyte Name	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acenaphthene	ND U	0.20	0.0088	1	04/11/05	04/28/05	KWG0505761	
2,4-Dinitrophenol	ND U <i>UJ</i>	3.9	0.53	1	04/11/05	04/28/05	KWG0505761	
4-Nitrophenol	ND U	2.0	0.54	1	04/11/05	04/28/05	KWG0505761	
Dibenzofuran	ND U	0.20	0.014	1	04/11/05	04/28/05	KWG0505761	
2,4-Dinitrotoluene	ND U	0.20	0.020	1	04/11/05	04/28/05	KWG0505761	
Diethyl Phthalate	1.3 <i>0.20u</i>	0.20	0.026	1	04/11/05	04/28/05	KWG0505761	
Fluorene	0.056 J	0.20	0.012	1	04/11/05	04/28/05	KWG0505761	
4-Chlorophenyl Phenyl Ether	ND U	0.20	0.0085	1	04/11/05	04/28/05	KWG0505761	
4-Nitroaniline	ND U	0.97	0.17	1	04/11/05	04/28/05	KWG0505761	
2-Methyl-4,6-dinitrophenol	ND U <i>UJ</i>	2.0	0.013	1	04/11/05	04/28/05	KWG0505761	
N-Nitrosodiphenylamine	ND U	0.20	0.028	1	04/11/05	04/28/05	KWG0505761	
4-Bromophenyl Phenyl Ether	ND U	0.20	0.018	1	04/11/05	04/28/05	KWG0505761	
Hexachlorobenzene	ND U	0.20	0.015	1	04/11/05	04/28/05	KWG0505761	
Atrazine	ND U	0.20	0.053	1	04/11/05	04/28/05	KWG0505761	
Pentachlorophenol	ND U	0.97	0.029	1	04/11/05	04/28/05	KWG0505761	
Phenanthrene	0.17 J	0.20	0.011	1	04/11/05	04/28/05	KWG0505761	
Anthracene	ND U	0.20	0.015	1	04/11/05	04/28/05	KWG0505761	
Carbazole	ND U	0.20	0.013	1	04/11/05	04/28/05	KWG0505761	
Di-n-butyl Phthalate	0.16 J <i>0.20u</i>	0.20	0.027	1	04/11/05	04/28/05	KWG0505761	
Fluoranthene	0.030 J	0.20	0.013	1	04/11/05	04/28/05	KWG0505761	
Pyrene	0.046 J	0.20	0.015	1	04/11/05	04/28/05	KWG0505761	
Butyl Benzyl Phthalate	ND U	0.20	0.026	1	04/11/05	04/28/05	KWG0505761	
3,3'-Dichlorobenzidine	ND U	2.0	0.43	1	04/11/05	04/28/05	KWG0505761	
Benz(a)anthracene	ND U	0.20	0.012	1	04/11/05	04/28/05	KWG0505761	
Chrysene	ND U	0.20	0.014	1	04/11/05	04/28/05	KWG0505761	
Bis(2-ethylhexyl) Phthalate	15 D	9.7	1.4	5	04/11/05	05/04/05	KWG0505761	
Di-n-octyl Phthalate	ND U	0.20	0.032	1	04/11/05	04/28/05	KWG0505761	
Benzo(b)fluoranthene	ND U	0.20	0.020	1	04/11/05	04/28/05	KWG0505761	
Benzo(k)fluoranthene	ND U	0.20	0.020	1	04/11/05	04/28/05	KWG0505761	
Benzo(a)pyrene	ND U	0.20	0.016	1	04/11/05	04/28/05	KWG0505761	
Indeno(1,2,3-cd)pyrene	ND U	0.20	0.024	1	04/11/05	04/28/05	KWG0505761	
Dibenz(a,h)anthracene	ND U	0.20	0.031	1	04/11/05	04/28/05	KWG0505761	
Benzo(g,h,i)perylene	ND U	0.20	0.017	1	04/11/05	04/28/05	KWG0505761	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
 Project: Novato Ballfields/G486063
 Sample Matrix: Water

Service Request: K2502571
 Date Collected: 04/07/2005
 Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name: TO63-R1-GW01
 Lab Code: K2502571-008

Units: ug/L
 Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	95	38-119	04/28/05	Acceptable
Phenol-d6	98	36-134	04/28/05	Acceptable
Nitrobenzene-d5	103	47-128	04/28/05	Acceptable
2-Fluorobiphenyl	84	41-117	04/28/05	Acceptable
2,4,6-Tribromophenol	88	44-135	04/28/05	Acceptable
Terphenyl-d14	59	32-155	04/28/05	Acceptable

† Analyte Comments

4-Methylphenol This analyte cannot be separated from 3-Methylphenol.

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Water

Service Request: K2502571
Date Collected: 04/05/2005
Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name:	TO63-SPN-GW01	Units:	ug/L
Lab Code:	K2502571-009	Basis:	NA
Extraction Method:	EPA 3520C	Level:	Low
Analysis Method:	8270C		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2,4,5-Tetrachlorobenzene	ND	U	0.20	0.057	1	04/11/05	04/29/05	KWG0505761	
Phenol	0.085	J	0.50	0.020	1	04/11/05	04/29/05	KWG0505761	
Bis(2-chloroethyl) Ether	ND	U	0.20	0.015	1	04/11/05	04/29/05	KWG0505761	
2-Chlorophenol	ND	U	0.50	0.015	1	04/11/05	04/29/05	KWG0505761	
2-Methylphenol	ND	U	0.50	0.060	1	04/11/05	04/29/05	KWG0505761	
Bis(2-chloroisopropyl) Ether	ND	U	0.20	0.017	1	04/11/05	04/29/05	KWG0505761	
Acetophenone	0.24	J	0.50	0.16	1	04/11/05	04/29/05	KWG0505761	
4-Methylphenol†	ND	U	0.50	0.051	1	04/11/05	04/29/05	KWG0505761	
N-Nitrosodi-n-propylamine	ND	U	0.20	0.033	1	04/11/05	04/29/05	KWG0505761	
Hexachloroethane	ND	U	0.20	0.019	1	04/11/05	04/29/05	KWG0505761	
Nitrobenzene	ND	U	0.20	0.0074	1	04/11/05	04/29/05	KWG0505761	
Isophorone	ND	U	0.20	0.0085	1	04/11/05	04/29/05	KWG0505761	
2-Nitrophenol	ND	U	0.50	0.014	1	04/11/05	04/29/05	KWG0505761	
2,4-Dimethylphenol	ND	U	2.0	0.32	1	04/11/05	04/29/05	KWG0505761	
Bis(2-chloroethoxy)methane	ND	U	0.20	0.012	1	04/11/05	04/29/05	KWG0505761	
2,4-Dichlorophenol	ND	U	0.50	0.024	1	04/11/05	04/29/05	KWG0505761	
Naphthalene	ND	U	0.20	0.012	1	04/11/05	04/29/05	KWG0505761	
4-Chloroaniline	ND	U	0.20	0.018	1	04/11/05	04/29/05	KWG0505761	
Hexachlorobutadiene	ND	U	0.20	0.020	1	04/11/05	04/29/05	KWG0505761	
Caprolactam	0.58		0.50	0.22	1	04/11/05	04/29/05	KWG0505761	
Benzaldehyde	0.56		0.20	0.046	1	04/11/05	04/29/05	KWG0505761	
4-Chloro-3-methylphenol	0.088	J	0.50	0.029	1	04/11/05	04/29/05	KWG0505761	
2-Methylnaphthalene	ND	U	0.20	0.012	1	04/11/05	04/29/05	KWG0505761	
Hexachlorocyclopentadiene	ND	U	1.0	0.041	1	04/11/05	04/29/05	KWG0505761	
2,4,6-Trichlorophenol	ND	U	0.50	0.037	1	04/11/05	04/29/05	KWG0505761	
2,4,5-Trichlorophenol	ND	U	0.50	0.026	1	04/11/05	04/29/05	KWG0505761	
Biphenyl	ND	U	0.20	0.037	1	04/11/05	04/29/05	KWG0505761	
2-Chloronaphthalene	ND	U	0.20	0.016	1	04/11/05	04/29/05	KWG0505761	
2-Nitroaniline	ND	U	0.20	0.015	1	04/11/05	04/29/05	KWG0505761	
Dimethyl Phthalate	ND	U	0.20	0.013	1	04/11/05	04/29/05	KWG0505761	
2,6-Dinitrotoluene	ND	U	0.20	0.0088	1	04/11/05	04/29/05	KWG0505761	
Acenaphthylene	ND	U	0.20	0.011	1	04/11/05	04/29/05	KWG0505761	
3-Nitroaniline	ND	U	1.0	0.23	1	04/11/05	04/29/05	KWG0505761	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Water

Service Request: K2502571
Date Collected: 04/05/2005
Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name:	TO63-SPN-GW01	Units:	ug/L
Lab Code:	K2502571-009	Basis:	NA
Extraction Method:	EPA 3520C	Level:	Low
Analysis Method:	8270C		

Analyte Name	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acenaphthene	ND U	0.20	0.0088	1	04/11/05	04/29/05	KWG0505761	
2,4-Dinitrophenol	ND U <i>WT</i>	4.0	0.53	1	04/11/05	04/29/05	KWG0505761	
4-Nitrophenol	ND U	2.0	0.54	1	04/11/05	04/29/05	KWG0505761	
Dibenzofuran	ND U	0.20	0.014	1	04/11/05	04/29/05	KWG0505761	
2,4-Dinitrotoluene	ND U	0.20	0.020	1	04/11/05	04/29/05	KWG0505761	
Diethyl Phthalate	0.078 J <i>0.20u</i>	0.20	0.026	1	04/11/05	04/29/05	KWG0505761	
Fluorene	ND U	0.20	0.012	1	04/11/05	04/29/05	KWG0505761	
4-Chlorophenyl Phenyl Ether	ND U	0.20	0.0085	1	04/11/05	04/29/05	KWG0505761	
4-Nitroaniline	ND U	1.0	0.17	1	04/11/05	04/29/05	KWG0505761	
2-Methyl-4,6-dinitrophenol	ND U <i>WT</i>	2.0	0.013	1	04/11/05	04/29/05	KWG0505761	
N-Nitrosodiphenylamine	ND U	0.20	0.028	1	04/11/05	04/29/05	KWG0505761	
4-Bromophenyl Phenyl Ether	ND U	0.20	0.018	1	04/11/05	04/29/05	KWG0505761	
Hexachlorobenzene	ND U	0.20	0.015	1	04/11/05	04/29/05	KWG0505761	
Atrazine	ND U	0.20	0.053	1	04/11/05	04/29/05	KWG0505761	
Pentachlorophenol	ND U	1.0	0.029	1	04/11/05	04/29/05	KWG0505761	
Phenanthrene	0.029 J	0.20	0.011	1	04/11/05	04/29/05	KWG0505761	
Anthracene	ND U	0.20	0.015	1	04/11/05	04/29/05	KWG0505761	
Carbazole	ND U	0.20	0.013	1	04/11/05	04/29/05	KWG0505761	
Di-n-butyl Phthalate	0.14 J <i>0.20u</i>	0.20	0.027	1	04/11/05	04/29/05	KWG0505761	
Fluoranthene	ND U	0.20	0.013	1	04/11/05	04/29/05	KWG0505761	
Pyrene	ND U	0.20	0.015	1	04/11/05	04/29/05	KWG0505761	
Butyl Benzyl Phthalate	ND U	0.20	0.026	1	04/11/05	04/29/05	KWG0505761	
3,3'-Dichlorobenzidine	ND U	2.0	0.43	1	04/11/05	04/29/05	KWG0505761	
Benz(a)anthracene	ND U	0.20	0.012	1	04/11/05	04/29/05	KWG0505761	
Chrysene	ND U	0.20	0.014	1	04/11/05	04/29/05	KWG0505761	
Bis(2-ethylhexyl) Phthalate	ND U	2.0	0.27	1	04/11/05	04/29/05	KWG0505761	
Di-n-octyl Phthalate	ND U	0.20	0.032	1	04/11/05	04/29/05	KWG0505761	
Benzo(b)fluoranthene	ND U	0.20	0.020	1	04/11/05	04/29/05	KWG0505761	
Benzo(k)fluoranthene	ND U	0.20	0.020	1	04/11/05	04/29/05	KWG0505761	
Benzo(a)pyrene	ND U	0.20	0.016	1	04/11/05	04/29/05	KWG0505761	
Indeno(1,2,3-cd)pyrene	ND U	0.20	0.024	1	04/11/05	04/29/05	KWG0505761	
Dibenz(a,h)anthracene	ND U	0.20	0.031	1	04/11/05	04/29/05	KWG0505761	
Benzo(g,h,i)perylene	ND U	0.20	0.017	1	04/11/05	04/29/05	KWG0505761	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Water

Service Request: K2502571
Date Collected: 04/05/2005
Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name: TO63-SPN-GW01
Lab Code: K2502571-009

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	94	38-119	04/29/05	Acceptable
Phenol-d6	99	36-134	04/29/05	Acceptable
Nitrobenzene-d5	100	47-128	04/29/05	Acceptable
2-Fluorobiphenyl	93	41-117	04/29/05	Acceptable
2,4,6-Tribromophenol	87	44-135	04/29/05	Acceptable
Terphenyl-d14	64	32-155	04/29/05	Acceptable

† Analyte Comments

4-Methylphenol This analyte cannot be separated from 3-Methylphenol.

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Water

Service Request: K2502571
Date Collected: 04/05/2005
Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name: TO63-RINSATE-02 **Units:** ug/L
Lab Code: K2502571-010 **Basis:** NA
Extraction Method: EPA 3520C **Level:** Low
Analysis Method: 8270C

Analyte Name	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2,4,5-Tetrachlorobenzene	ND U	0.23	0.064	1	04/11/05	04/29/05	KWG0505761	
Phenol	ND U	0.56	0.022	1	04/11/05	04/29/05	KWG0505761	
Bis(2-chloroethyl) Ether	ND U	0.23	0.016	1	04/11/05	04/29/05	KWG0505761	
2-Chlorophenol	ND U	0.56	0.017	1	04/11/05	04/29/05	KWG0505761	
2-Methylphenol	ND U	0.56	0.066	1	04/11/05	04/29/05	KWG0505761	
Bis(2-chloroisopropyl) Ether	ND U	0.23	0.019	1	04/11/05	04/29/05	KWG0505761	
Acetophenone	ND U	0.56	0.18	1	04/11/05	04/29/05	KWG0505761	
4-Methylphenol†	ND U	0.56	0.057	1	04/11/05	04/29/05	KWG0505761	
N-Nitrosodi-n-propylamine	ND U	0.23	0.036	1	04/11/05	04/29/05	KWG0505761	
Hexachloroethane	ND U	0.23	0.021	1	04/11/05	04/29/05	KWG0505761	
Nitrobenzene	ND U	0.23	0.0083	1	04/11/05	04/29/05	KWG0505761	
Isophorone	ND U	0.23	0.0094	1	04/11/05	04/29/05	KWG0505761	
2-Nitrophenol	ND U	0.56	0.015	1	04/11/05	04/29/05	KWG0505761	
2,4-Dimethylphenol	ND U	2.3	0.36	1	04/11/05	04/29/05	KWG0505761	
Bis(2-chloroethoxy)methane	ND U	0.23	0.013	1	04/11/05	04/29/05	KWG0505761	
2,4-Dichlorophenol	ND U	0.56	0.027	1	04/11/05	04/29/05	KWG0505761	
Naphthalene	0.050 J	0.23	0.014	1	04/11/05	04/29/05	KWG0505761	
4-Chloroaniline	ND U	0.23	0.020	1	04/11/05	04/29/05	KWG0505761	
Hexachlorobutadiene	ND U	0.23	0.022	1	04/11/05	04/29/05	KWG0505761	
Caprolactam	0.42 J	0.56	0.25	1	04/11/05	04/29/05	KWG0505761	
Benzaldehyde	0.84	0.23	0.052	1	04/11/05	04/29/05	KWG0505761	
4-Chloro-3-methylphenol	0.11 J	0.56	0.033	1	04/11/05	04/29/05	KWG0505761	
2-Methylnaphthalene	ND U	0.23	0.013	1	04/11/05	04/29/05	KWG0505761	
Hexachlorocyclopentadiene	ND U	1.2	0.046	1	04/11/05	04/29/05	KWG0505761	
2,4,6-Trichlorophenol	ND U	0.56	0.041	1	04/11/05	04/29/05	KWG0505761	
2,4,5-Trichlorophenol	ND U	0.56	0.028	1	04/11/05	04/29/05	KWG0505761	
Biphenyl	ND U	0.23	0.042	1	04/11/05	04/29/05	KWG0505761	
2-Chloronaphthalene	ND U	0.23	0.017	1	04/11/05	04/29/05	KWG0505761	
2-Nitroaniline	ND U	0.23	0.017	1	04/11/05	04/29/05	KWG0505761	
Dimethyl Phthalate	ND U	0.23	0.014	1	04/11/05	04/29/05	KWG0505761	
2,6-Dinitrotoluene	ND U	0.23	0.0098	1	04/11/05	04/29/05	KWG0505761	
Acenaphthylene	ND U	0.23	0.012	1	04/11/05	04/29/05	KWG0505761	
3-Nitroaniline	ND U	1.2	0.26	1	04/11/05	04/29/05	KWG0505761	

Comments: _____

Grotof

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Water

Service Request: K2502571
Date Collected: 04/05/2005
Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name:	TO63-RINSATE-02	Units:	ug/L
Lab Code:	K2502571-010	Basis:	NA
Extraction Method:	EPA 3520C	Level:	Low
Analysis Method:	8270C		

Analyte Name	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acenaphthene	ND U	0.23	0.0097	1	04/11/05	04/29/05	KWG0505761	
2,4-Dinitrophenol	ND U <i>UJ</i>	4.5	0.59	1	04/11/05	04/29/05	KWG0505761	
4-Nitrophenol	ND U	2.3	0.60	1	04/11/05	04/29/05	KWG0505761	
Dibenzofuran	ND U	0.23	0.015	1	04/11/05	04/29/05	KWG0505761	
2,4-Dinitrotoluene	ND U	0.23	0.022	1	04/11/05	04/29/05	KWG0505761	
Diethyl Phthalate	0.050 J <i>0.23U</i>	0.23	0.029	1	04/11/05	04/29/05	KWG0505761	
Fluorene	ND U	0.23	0.014	1	04/11/05	04/29/05	KWG0505761	
4-Chlorophenyl Phenyl Ether	ND U	0.23	0.0094	1	04/11/05	04/29/05	KWG0505761	
4-Nitroaniline	ND U	1.2	0.19	1	04/11/05	04/29/05	KWG0505761	
2-Methyl-4,6-dinitrophenol	ND U <i>UJ</i>	2.3	0.015	1	04/11/05	04/29/05	KWG0505761	
N-Nitrosodiphenylamine	ND U	0.23	0.031	1	04/11/05	04/29/05	KWG0505761	
4-Bromophenyl Phenyl Ether	ND U	0.23	0.020	1	04/11/05	04/29/05	KWG0505761	
Hexachlorobenzene	ND U	0.23	0.016	1	04/11/05	04/29/05	KWG0505761	
Atrazine	ND U	0.23	0.059	1	04/11/05	04/29/05	KWG0505761	
Pentachlorophenol	ND U	1.2	0.032	1	04/11/05	04/29/05	KWG0505761	
Phenanthrene	ND U	0.23	0.012	1	04/11/05	04/29/05	KWG0505761	
Anthracene	ND U	0.23	0.016	1	04/11/05	04/29/05	KWG0505761	
Carbazole	ND U	0.23	0.014	1	04/11/05	04/29/05	KWG0505761	
Di-n-butyl Phthalate	0.13 J <i>0.23U</i>	0.23	0.030	1	04/11/05	04/29/05	KWG0505761	
Fluoranthene	ND U	0.23	0.014	1	04/11/05	04/29/05	KWG0505761	
Pyrene	ND U	0.23	0.017	1	04/11/05	04/29/05	KWG0505761	
Butyl Benzyl Phthalate	ND U	0.23	0.029	1	04/11/05	04/29/05	KWG0505761	
3,3'-Dichlorobenzidine	ND U	2.3	0.48	1	04/11/05	04/29/05	KWG0505761	
Benz(a)anthracene	ND U	0.23	0.013	1	04/11/05	04/29/05	KWG0505761	
Chrysene	ND U	0.23	0.016	1	04/11/05	04/29/05	KWG0505761	
Bis(2-ethylhexyl) Phthalate	ND U	2.3	0.30	1	04/11/05	04/29/05	KWG0505761	
Di-n-octyl Phthalate	ND U	0.23	0.036	1	04/11/05	04/29/05	KWG0505761	
Benzo(b)fluoranthene	ND U	0.23	0.022	1	04/11/05	04/29/05	KWG0505761	
Benzo(k)fluoranthene	ND U	0.23	0.022	1	04/11/05	04/29/05	KWG0505761	
Benzo(a)pyrene	ND U	0.23	0.018	1	04/11/05	04/29/05	KWG0505761	
Indeno(1,2,3-cd)pyrene	ND U	0.23	0.027	1	04/11/05	04/29/05	KWG0505761	
Dibenz(a,h)anthracene	ND U	0.23	0.034	1	04/11/05	04/29/05	KWG0505761	
Benzo(g,h,i)perylene	ND U	0.23	0.019	1	04/11/05	04/29/05	KWG0505761	

Comments: _____

6/2005

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Water

Service Request: K2502571
Date Collected: 04/05/2005
Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name: TO63-RINSATE-02 **Units:** ug/L
Lab Code: K2502571-010 **Basis:** NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	84	38-119	04/29/05	Acceptable
Phenol-d6	88	36-134	04/29/05	Acceptable
Nitrobenzene-d5	93	47-128	04/29/05	Acceptable
2-Fluorobiphenyl	87	41-117	04/29/05	Acceptable
2,4,6-Tribromophenol	63	44-135	04/29/05	Acceptable
Terphenyl-d14	115	32-155	04/29/05	Acceptable

† Analyte Comments

4-Methylphenol This analyte cannot be separated from 3-Methylphenol.

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
 Project: Novato Ballfields/G486063
 Sample Matrix: Water

Service Request: K2502571
 Date Collected: 04/05/2005
 Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name:	TO63-RSP-GW01	Units:	ug/L
Lab Code:	K2502571-011	Basis:	NA
Extraction Method:	EPA 3520C	Level:	Low
Analysis Method:	8270C		

Analyte Name	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,2,4,5-Tetrachlorobenzene	ND U	0.20	0.057	1	04/11/05	04/29/05	KWG0505761	
Phenol	ND U	0.50	0.020	1	04/11/05	04/29/05	KWG0505761	
Bis(2-chloroethyl) Ether	ND U	0.20	0.015	1	04/11/05	04/29/05	KWG0505761	
2-Chlorophenol	ND U	0.50	0.015	1	04/11/05	04/29/05	KWG0505761	
2-Methylphenol	ND U	0.50	0.060	1	04/11/05	04/29/05	KWG0505761	
Bis(2-chloroisopropyl) Ether	ND U	0.20	0.017	1	04/11/05	04/29/05	KWG0505761	
Acetophenone	0.30 J	0.50	0.16	1	04/11/05	04/29/05	KWG0505761	
4-Methylphenol†	ND U	0.50	0.051	1	04/11/05	04/29/05	KWG0505761	
N-Nitrosodi-n-propylamine	ND U	0.20	0.033	1	04/11/05	04/29/05	KWG0505761	
Hexachloroethane	ND U	0.20	0.019	1	04/11/05	04/29/05	KWG0505761	
Nitrobenzene	ND U	0.20	0.0074	1	04/11/05	04/29/05	KWG0505761	
Isophorone	0.39	0.20	0.0085	1	04/11/05	04/29/05	KWG0505761	
2-Nitrophenol	ND U	0.50	0.014	1	04/11/05	04/29/05	KWG0505761	
2,4-Dimethylphenol	ND U	2.0	0.32	1	04/11/05	04/29/05	KWG0505761	
Bis(2-chloroethoxy)methane	ND U	0.20	0.012	1	04/11/05	04/29/05	KWG0505761	
2,4-Dichlorophenol	ND U	0.50	0.024	1	04/11/05	04/29/05	KWG0505761	
Naphthalene	0.027 J	0.20	0.012	1	04/11/05	04/29/05	KWG0505761	
4-Chloroaniline	ND U	0.20	0.018	1	04/11/05	04/29/05	KWG0505761	
Hexachlorobutadiene	ND U	0.20	0.020	1	04/11/05	04/29/05	KWG0505761	
Caprolactam	0.50	0.50	0.22	1	04/11/05	04/29/05	KWG0505761	
Benzaldehyde	0.47	0.20	0.046	1	04/11/05	04/29/05	KWG0505761	
4-Chloro-3-methylphenol	ND U	0.50	0.029	1	04/11/05	04/29/05	KWG0505761	
2-Methylnaphthalene	ND U	0.20	0.012	1	04/11/05	04/29/05	KWG0505761	
Hexachlorocyclopentadiene	ND U	1.0	0.041	1	04/11/05	04/29/05	KWG0505761	
2,4,6-Trichlorophenol	ND U	0.50	0.037	1	04/11/05	04/29/05	KWG0505761	
2,4,5-Trichlorophenol	ND U	0.50	0.026	1	04/11/05	04/29/05	KWG0505761	
Biphenyl	ND U	0.20	0.037	1	04/11/05	04/29/05	KWG0505761	
2-Chloronaphthalene	ND U	0.20	0.016	1	04/11/05	04/29/05	KWG0505761	
2-Nitroaniline	ND U	0.20	0.015	1	04/11/05	04/29/05	KWG0505761	
Dimethyl Phthalate	ND U	0.20	0.013	1	04/11/05	04/29/05	KWG0505761	
2,6-Dinitrotoluene	ND U	0.20	0.0088	1	04/11/05	04/29/05	KWG0505761	
Acenaphthylene	ND U	0.20	0.011	1	04/11/05	04/29/05	KWG0505761	
3-Nitroaniline	ND U	1.0	0.23	1	04/11/05	04/29/05	KWG0505761	

Comments: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Water

Service Request: K2502571
Date Collected: 04/05/2005
Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name: TO63-RSP-GW01 **Units:** ug/L
Lab Code: K2502571-011 **Basis:** NA
Extraction Method: EPA 3520C **Level:** Low
Analysis Method: 8270C

Analyte Name	Result Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acenaphthene	ND U	0.20	0.0088	1	04/11/05	04/29/05	KWG0505761	
2,4-Dinitrophenol	ND U <i>15</i>	4.0	0.53	1	04/11/05	04/29/05	KWG0505761	
4-Nitrophenol	ND U	2.0	0.54	1	04/11/05	04/29/05	KWG0505761	
Dibenzofuran	ND U	0.20	0.014	1	04/11/05	04/29/05	KWG0505761	
2,4-Dinitrotoluene	ND U	0.20	0.020	1	04/11/05	04/29/05	KWG0505761	
Diethyl Phthalate	0.081 J <i>0.20 u</i>	0.20	0.026	1	04/11/05	04/29/05	KWG0505761	
Fluorene	ND U	0.20	0.012	1	04/11/05	04/29/05	KWG0505761	
4-Chlorophenyl Phenyl Ether	ND U	0.20	0.0085	1	04/11/05	04/29/05	KWG0505761	
4-Nitroaniline	ND U	1.0	0.17	1	04/11/05	04/29/05	KWG0505761	
2-Methyl-4,6-dinitrophenol	ND U <i>15</i>	2.0	0.013	1	04/11/05	04/29/05	KWG0505761	
N-Nitrosodiphenylamine	ND U	0.20	0.028	1	04/11/05	04/29/05	KWG0505761	
4-Bromophenyl Phenyl Ether	ND U	0.20	0.018	1	04/11/05	04/29/05	KWG0505761	
Hexachlorobenzene	ND U	0.20	0.015	1	04/11/05	04/29/05	KWG0505761	
Atrazine	ND U	0.20	0.053	1	04/11/05	04/29/05	KWG0505761	
Pentachlorophenol	ND U	1.0	0.029	1	04/11/05	04/29/05	KWG0505761	
Phenanthrene	0.028 J <i>0.20 u</i>	0.20	0.011	1	04/11/05	04/29/05	KWG0505761	
Anthracene	ND U	0.20	0.015	1	04/11/05	04/29/05	KWG0505761	
Carbazole	ND U	0.20	0.013	1	04/11/05	04/29/05	KWG0505761	
Di-n-butyl Phthalate	0.15 J <i>0.20 u</i>	0.20	0.027	1	04/11/05	04/29/05	KWG0505761	
Fluoranthene	ND U	0.20	0.013	1	04/11/05	04/29/05	KWG0505761	
Pyrene	ND U	0.20	0.015	1	04/11/05	04/29/05	KWG0505761	
Butyl Benzyl Phthalate	ND U	0.20	0.026	1	04/11/05	04/29/05	KWG0505761	
3,3'-Dichlorobenzidine	ND U	2.0	0.43	1	04/11/05	04/29/05	KWG0505761	
Benz(a)anthracene	ND U	0.20	0.012	1	04/11/05	04/29/05	KWG0505761	
Chrysene	ND U	0.20	0.014	1	04/11/05	04/29/05	KWG0505761	
Bis(2-ethylhexyl) Phthalate	0.31 J	2.0	0.27	1	04/11/05	04/29/05	KWG0505761	
Di-n-octyl Phthalate	ND U	0.20	0.032	1	04/11/05	04/29/05	KWG0505761	
Benzo(b)fluoranthene	ND U	0.20	0.020	1	04/11/05	04/29/05	KWG0505761	
Benzo(k)fluoranthene	ND U	0.20	0.020	1	04/11/05	04/29/05	KWG0505761	
Benzo(a)pyrene	ND U	0.20	0.016	1	04/11/05	04/29/05	KWG0505761	
Indeno(1,2,3-cd)pyrene	ND U	0.20	0.024	1	04/11/05	04/29/05	KWG0505761	
Dibenz(a,h)anthracene	ND U	0.20	0.031	1	04/11/05	04/29/05	KWG0505761	
Benzo(g,h,i)perylene	ND U	0.20	0.017	1	04/11/05	04/29/05	KWG0505761	

Comments: _____

6/20/05

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Water

Service Request: K2502571
Date Collected: 04/05/2005
Date Received: 04/08/2005

Semi-Volatile Organic Compounds by GC/MS

Sample Name: TO63-RSP-GW01 **Units:** ug/L
Lab Code: K2502571-011 **Basis:** NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	95	38-119	04/29/05	Acceptable
Phenol-d6	105	36-134	04/29/05	Acceptable
Nitrobenzene-d5	104	47-128	04/29/05	Acceptable
2-Fluorobiphenyl	95	41-117	04/29/05	Acceptable
2,4,6-Tribromophenol	103	44-135	04/29/05	Acceptable
Terphenyl-d14	61	32-155	04/29/05	Acceptable

† Analyte Comments

4-Methylphenol This analyte cannot be separated from 3-Methylphenol.

Comments: _____

LDC #: 13575D2

VALIDATION COMPLETENESS WORKSHEET

Date: 6/14/05

SDG #: K2502571

Level III/IV

Page: 1 of 1

Laboratory: Columbia Analytical Services

Reviewer: J

2nd Reviewer: J

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 4/5 - 6/05
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	TM	70% SD ≤ 30/15. Y = spcs
IV.	Continuing calibration	TM	70% DS 20. ICV ≤ 15% ↓
V.	Blanks	TM	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	TM	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	Not reviewed for Level III validation.
XII.	Compound quantitation/CRQLs	A	Not reviewed for Level III validation.
XIII.	Tentatively identified compounds (TICs)	N	Not reviewed for Level III validation.
XIV.	System performance	A	Not reviewed for Level III validation.
XV.	Overall assessment of data	A	
XVI.	Field duplicates	TM	D = 2+3
XVII.	Field blanks	TM	ER = 1 . 9 .

Note: A = Acceptable

ND = No compounds detected

D = Duplicate

N = Not provided/applicable

R = Rinsate

TB = Trip blank

SW = See worksheet

FB = Field blank

EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

1	TO63-R3-GW01-ER	11	TO63-R3-GW01MS	21	KW40505761-4	31	
2	TO63-R3-GW01	12	TO63-R3-GW01MSD	22		32	
3	TO63-R3-GW01-Dup	13		23		33	
4	TO63-R4-GW01**	14		24		34	
5	TO63-R5-GW01	15		25		35	
6	TO63-R2-GW01	16		26		36	
7	TO63-R1-GW01	17		27		37	
8	TO63-SPN-GW01	18		28		38	
9	TO63-RINSATE-02	19		29		39	
10	TO63-RSP-GW01	20		30		40	

LDC #: 1357502
SDG #: K2502571

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: A
2nd Reviewer: J

Method: Semivolatiles (EPA SW 846 Method 8270C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. GC/MS Instrument performance check				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	/			
Were all samples analyzed within the 12 hour clock criteria?	/			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	/			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	/			
Was a curve fit used for evaluation?	/			
Did the initial calibration meet the curve fit acceptance criteria of > 0.990?	/			
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) > 0.05?	.	/		
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	/			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	/			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?		/		
V. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was a method blank analyzed for each matrix and concentration?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	/			
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	/			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			/	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			/	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.				
Was a MS/MSD analyzed every 20 samples of each matrix?	/			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		/		
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			

LDC #: 1357502
SDG #: K2502571

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: g
2nd Reviewer: J

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	/			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		/	/	
Were the performance evaluation (PE) samples within the acceptance limits?			/	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	/			
Were retention times within \pm 30 seconds from the associated calibration standard?	/			
XI. Target compound identification				
Were relative retention times (RRT's) within \pm 0.06 RRT units of the standard?	/			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	/			
Were chromatogram peaks verified and accounted for?	/			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	/			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			/	
Were relative intensities of the major ions within \pm 20% between the sample and the reference spectra?			/	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?			/	
XIV. System performance				
System performance was found to be acceptable.	/			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.	/			
Target compounds were detected in the field duplicates.	/			
XVII. Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.	/			

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

A. Phenol*	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-1-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	TTT. Acetophenone
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	UUU. Caprolactam
N. 2-Nitrophenol**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	WW. Benzaldehyde
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	WW. WWW.

LDC #: 135750-2
 SDG #: 135750-2571

VALIDATION FINDINGS WORKSHEET Blanks

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

N N/A Was a method blank analyzed for each matrix?

N N/A Was a method blank analyzed for each concentration preparation level?

N N/A Was a method blank associated with every sample?

N N/A Was the blank contaminated? If yes, please see qualification below.

Blank extraction date: 4/11/05 Blank analysis date: 4/28/05

Conc. units: /ug

Associated Samples:

Compound	Blank ID	Sample Identification							
		1	2	3	4	5	6	7	8
	135750-761-4								
	0.027	0.048	0.054	0.052	0.194	0.063	0.191	0.022	0.13
X	0.083	0.15	0.21	0.04	0.204	0.36	0.194	0.13	0.27
X									

Blank extraction date: _____ Blank analysis date: _____ Associated Samples:
 Conc. units: _____

Compound	Blank ID	Sample Identification							
		1	2	3	4	5	6	7	8

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
 Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC#: 13575D2
SDG#: K2502571

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: / of /
Reviewer: 4
2nd Reviewer: JW

METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

Y N NA

Were field duplicate pairs identified in this SDG?

Y N NA

Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD	
	2	3		
TTT	0.16	0.18	12	
M	0.28	0.25	11	
S	0.023	0.19U	200	
T	0.027	0.19U	200	
UUU	0.46	0.36	24	
VVV	0.29	0.14	70	
V	0.11	0.090	20	
LL	0.054	0.052	4	
UU	0.018	0.19U	200	
XX	0.14	0.13	7	
ZZ	0.018	0.19U	200	

V:\FIELD DUPLICATES\13575D.wpd

LDC #: 1357502
SDG #: 42502571

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: A
2nd reviewer: J

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Y N N/A Were field blanks identified in this SDG?

Y N N/A Were target compounds identified in the field blanks?

Sample: 1 Field Blank / Trip Blank / Rinsate (circle one)

Compound	Concentration Units (<u>M</u>)
TTT	0.21
UUU	0.25
V	0.070
LL	0.048
XX	0.15
ZZ	0.015

Sample: 9 Field Blank / Trip Blank / Rinsate (circle one)

Compound	Concentration Units (<u>M</u>)
S	0.050
UUU	0.42
VVV	0.84
V	0.11
LL	0.050
XX	0.13

Sample: _____ Field Blank / Trip Blank / Rinsate (circle one)

Compound	Concentration Units ()

LDC #: 13575D2
SDG #: K25025T /

VALIDATION FINDINGS WORKSHEET

Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: J
2nd Reviewer: J

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$\begin{aligned}
 \text{RRF} &= \frac{(A_x)(C_s)}{(A_s)(C_x)}, & A_x &= \text{Area of compound}, \\
 \text{average RRF} &= \frac{\text{sum of the RRFs}}{\text{number of standards}}, & C_s &= \text{Concentration of compound}, \\
 \% \text{RSD} &= 100 * \frac{(S/X)}{X}, & X &= \text{Mean of the RRFs}
 \end{aligned}$$

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				RRF (\pm std)	RRF (\pm 2 std)	Average RRF (Initial)	Average RRF (Initial)	%RSD	%RSD
1	10A2	4/27/05	Phenol (1st internal standard)	1.57	1.54	1.53	1.53	4.7	4.3
			Naphthalene (2nd internal standard)	1.02	1.02	1.04	1.04	7.5	7.5
			Fluorene (3rd internal standard)	1.27	1.27	1.28	1.28	7.1	7.1
			Pentaethylbenzene (4th internal standard)	1.27	1.27	1.29	1.29	9.5	9.5
			Bis(2-ethylhexyl)phthalate (5th internal standard)	1.38	1.30	1.33	1.33	1.8	1.9
			Benzo(a)pyrene (6th internal standard)	1.25	1.25	1.26	1.26	6.5	6.4
			Phenol (1st internal standard)						
			Naphthalene (2nd internal standard)						
			Fluorene (3rd internal standard)						
			Pentachlorophenol (4th internal standard)						
			Bis(2-ethylhexyl)phthalate (5th internal standard)						
			Benzo(a)pyrene (6th internal standard)						
			Phenol (1st internal standard)						
			Naphthalene (2nd internal standard)						
			Fluorene (3rd internal standard)						
			Pentachlorophenol (4th internal standard)						
			Bis(2-ethylhexyl)phthalate (5th internal standard)						
			Benzo(a)pyrene (6th internal standard)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 13575-D2
SDG #: K0522571

VALIDATION FINDINGS WORKSHEET Continuing Calibration Results Verification

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Difference} = 100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$$

$$\text{RRF} = (A_x)(C_s) / (A_s)(C_x)$$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF

A_x = Area of compound,
 C_x = Concentration of compound,

A_s = Area of associated internal standard
 C_s = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (Initial)	Reported		Recalculated	
					RRF (CC)	%D	RRF (CC)	%D
1	0428 F003	4/28/05	Phenol (1st internal standard)	1.53	1.44	-6	1.44	-6
			Naphthalene (2nd internal standard)	1.04	1.00	-3	1.00	-3
			Fluorene (3rd internal standard)	1.28	1.26	-2	1.26	-2
			Pentachlorophenol (4th internal standard)	1.29	1.21	-7	1.21	-7
			Bis(2-ethylhexyl)phthalate (5th internal standard)	1.33	1.24	-7	1.24	-7
			Benz(a)pyrene (6th internal standard)	1.26	1.21	-4	1.21	-4
2			Phenol (1st internal standard)					
			Naphthalene (2nd internal standard)					
			Fluorene (3rd internal standard)					
			Pentachlorophenol (4th internal standard)					
			Bis(2-ethylhexyl)phthalate (5th internal standard)					
			Benz(a)pyrene (6th internal standard)					
3			Phenol (1st internal standard)					
			Naphthalene (2nd internal standard)					
			Fluorene (3rd internal standard)					
			Pentachlorophenol (4th internal standard)					
			Bis(2-ethylhexyl)phthalate (5th internal standard)					
			Benz(a)pyrene (6th internal standard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 13573D2
SDG #: K25025T

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: 9
2nd reviewer: 9

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 4

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5	2500	2306	92	92	0
2-Fluorobiphenyl	✓	2157	86	86	
Terphenyl-d14	✓	2214	89	89	
Phenol-d5	3750	3486	93	93	
2-Fluorophenol	✓	3189	85	85	
2,4,6-Tribromophenol	✓	3868	103	103	
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Nitrobenzene-d5					
2-Fluorobiphenyl					
Terphenyl-d14					
Phenol-d5					
2-Fluorophenol					
2,4,6-Tribromophenol					
2-Chlorophenol-d4					
1,2-Dichlorobenzene-d4					

LDC #: 1357512
SDG #: 10502571

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Duplicates Results Verification

Page: / of /
Reviewer: J
2nd Reviewer: J

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Recovery} = 100 * (\text{SSC} - \text{SC}) / \text{SA}$$

Where:
SSC = Spiked sample concentration
SA = Spike added

$$\text{RPD} = | \text{MS} - \text{MSD} | * 2 / (\text{MS} + \text{MSD})$$

MS = Matrix spike percent recovery
MSD = Matrix spike duplicate percent recovery

MS/MSD samples: 11 / 12

Compound	Spike Added (μg/L)		Sample Concentration (μg/L)		Spiked Sample Concentration (μg/L)		Matrix Spike		Matrix Spike Duplicate		MS/MSD RPD	
	MS	MSD	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
Phenol	4.76	5.0	ND	4.51	4.37	9.5	9.5	87	87	3	3	
2-Chlorophenol	↓	↓	↓	4.39	3.97	9.2	9.2	79	79	16	10	
1,4-Dichlorobenzene												
N-Nitroso-di-n-propylamine	4.76	5.0	ND	4.62	4.25	97	97	85	85	88	88	
1,2,4-Trichlorobenzene												
4-Chloro-3-methylphenol	4.76	5.0	4.92	4.95	10.1	10.1	97	97	1	1	1	
Acenaphthene			ND	3.99	3.74	84	84	75	75	T	T	
4-Nitrophenol				2.99	5.84	126	126	117	117	3	3	
2,4-Dinitrotoluene				5.15	4.98	108	108	100	100	3	3	
Pentachlorophenol				5.48	3.84	115	115	77	77	35	35	
Pyrene			0.018	4.19	3.17	88	88	63	63	28	28	

Comments: Refer to Matrix Spike/Matrix Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 1357512
SDG #: 125025T

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Page: 1 of 1
Reviewer: J
2nd Reviewer: J

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Recovery} = 100 * (\text{SC}/\text{SA})$$

Where: SC = Spike concentration

SA = Spike added

$$\text{RPD} = | \text{LCS} - \text{LCSD} | * 2 / (\text{LCS} + \text{LCSD})$$

LCS/LCSD samples: KW40505761-3

LCS = Laboratory control sample percent recovery

LCSD = Laboratory control sample duplicate percent recovery

Compound	Spike Added (LCS)		Spike Concentration (LCS/LCSD)		Percent Recovery		LCS/LCSD		RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
Phenol	5	NA	5.33	NA	107	107				
2-Chlorophenol	5	5.08	5.08	5.08	102	102				
1,4-Dichlorobenzene										
N-Nitroso-di-n-propylamine	5	NA	5.39	NA	108	108				
1,2,4-Trichlorobenzene										
4-Chloro-3-methylphenol	5	NA	5.10	NA	102	102				
Aceanaphthene	1	4.67	4.67	4.67	93	93				
4-Nitrophenol			5.65		113	113				
2,4-Dinitrotoluene			5.39		108	108				
Pentachlorophenol			4.36		87	87				
Pyrene			4.86		97	97				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 13575DZ
SDG #: K25D2571

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: / of /
Reviewer: d
2nd reviewer: g

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Y N N/A
Y N N/A

Were all reported results recalculated and verified for all level IV samples?
Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

$$\text{Concentration} = \frac{(A_x)(I_s)(DF)(2.0)}{(A_{si})(RRF)(V_o)(\%)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{si} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

V_o = Volume or weight of sample extract in milliliters (ml) or grams (g).

V_i = Volume of extract injected in microliters (ul)

V_c = Volume of the concentrated extract in microliters (ul)

Df = Dilution Factor.

%S = Percent solids, applicable to soil and solid matrices only.

2.0 = Factor of 2 to account for GPC cleanup

Example:

Sample I.D. 4, UV:

$$\text{Conc.} = \frac{(1887)(1000)(2)}{(150355)(1.29)(1,060)(1)(1)} \\ = 0.018 \text{ mg/c}$$

#	Sample ID	Compound	Reported Concentration ()	Calculated Concentration ()	Qualification